# HAIR

## AND ITS PRESERVATION

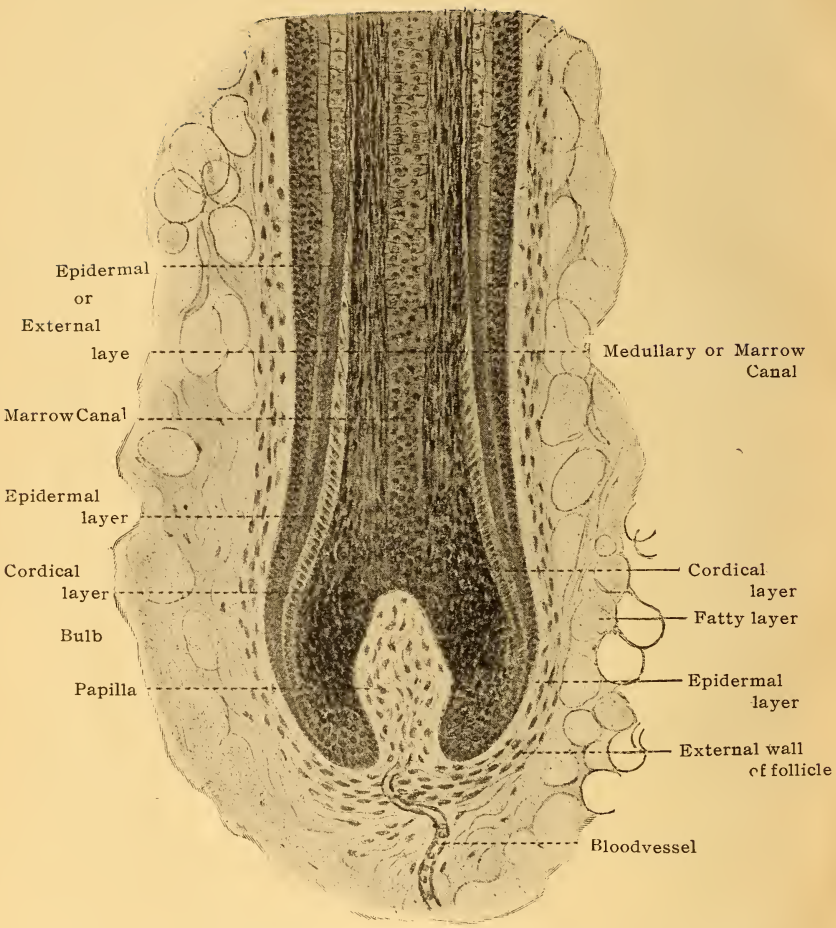


FIG. 1.—Hair, its Bulb and Shaft.

# HAIR

Its Nature, Growth and Most Common Affections,

WITH

Hygienic Rules for Its Preservation.

BY

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## PREFACE

Observing the almost universal ignorance of the nature of the hair, its characteristics, its development and its diseases, and the destruction of the hair of the young people of the present generation, I have come to the conclusion that some timely information and advice with some hygienic rules for the preservation of the hair might not come amiss.

It was my privilege to get the permission of the greatest specialist in hair diseases, Dr. Sabouraud, of Paris, to employ some of the fine plates he had made for his own great but still unfinished work on diseases of the hair, and thus to make my little contribution to the spread of knowledge in Hair diseases more profitable and intelligible to my readers.

I do not think it would be possible to find an up-to-date book suitable to the general public, on the subject which I have chosen, i.e., *The Nature, Growth, and most common Diseases of the Hair, and the proper Care thereof.*

The only work worth mentioning, written upon hair, is out of print and none has taken its place.

After years of study at the clinics, universities and hospitals of Paris, London, Vienna and Berlin, and gathering all the newest scientific facts, I concluded to present them in this form to the public.

RICHARD W. MÜLLER, M.D.

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# INTRODUCTION

Why is it that the hair, one of the most important assets of beauty, is so neglected by both men and women? We go to the manicure to improve our finger nails, and if our feet hurt us, we find our way to the chiropodist. But if our hair falls out, or is too dry or too oily, what do we do? Why, simply let it alone, or ask a friend's advice and follow or neglect it without a thought as to whether the advice is good, bad or indifferent. We see an advertisement of a hair tonic, with a picture of a woman with hair down to her feet, and without hesitation or doubt, we buy a bottle of it and apply it, often in a spasmodic manner, and find, if no visible bad results from its use, certainly no good ones; and our hair does not grow down to the ankles after a few weeks' use of this infallible remedy. Is it any wonder then, that in the theatre, in church, or in any place of public meeting where men remove their hats, we see so many bald heads? And among women, do we not sometimes wonder how they carry all the false hair and rats which they find it necessary to use now-a-days to eke out their own scant supply. But the hair in childhood, to begin with, is neglected. Mothers who rush to the doctor for every little childish ailment, never give much thought to the care of the child's hair. They cut it short or let it grow, as suits their own views and theories, but

without any real knowledge of the subject. Women wash their hair when convenient without any particular reason for so doing other than that they think it must need it; but they do it without knowing rightly how and when or what soap to use or whether any soap should be used. What would become of our teeth if they were treated as the hair is. A woman's hair is her crowning glory; therefore she should care for it as she does for her teeth and hands. And has not a bald head been a term of reproach ever since the small boys made fun of Elijah's? Do we not daily hear remarks referring to the resemblance of some young man's cranium to a shining billiard ball? Oh, he has amused his hair away! or, he has lived too fast! or, less reproachfully, his father or grandfather were bald, too, it must be hereditary! All of which conclusions are most often erroneous. The real reason generally is that no one took sufficient interest in the young man's scalp when he was a boy, until the stage of the disease which made him bald was too far advanced to save his hirsute adornment. Such being the case, I intend in the following chapters to explain in simple language what the nature of the hair is, how it develops, grows, becomes diseased and finally falls out, also how it may be preserved for its allotted time.

# CHAPTER I

## THE NATURE AND GROWTH OF THE HAIR

As I firmly believe, that advice is more readily accepted and followed the better the subject is understood, I shall begin this article by explaining the manner in which the human hair develops and grows, also the anatomical relation between hair and scalp, and later show the difference between a healthy and unhealthy state of the scalp.

### SECTION 1

### *The Structure of the Scalp*

To understand correctly the nature and growth of hair we must know something of the condition of the skin in which it is imbedded.

The skin is divided into three layers, the external or epidermis, the middle or horny, and the lower or granular layer. The external and uppermost layer, called epidermis, consists of cells, which are packed closely together like the cells of a honeycomb.

To make them still firmer and more compact, there are spikes or thorns there, shooting forth from the walls of the cells into the neighboring cells, making a pretty solid web, holding as firmly together as possible. This is best illustrated by inserting the fingers of one hand between the fingers of the other hand and letting another person try to pull them asunder.

Thus the epidermis is well able to withstand the injuries, to which it might be exposed.

The middle or horny layer consists of connective tissue, long spindle-shaped cells, which run in all directions, their fibres binding together all parts above and below, side by side, like the steel trusses of a bridge.

The third and lowest layer consists of numerous fat cells forming a soft bolster or cushion for the two upper layers, enabling the skin to stretch, yield to and follow all the different movements of the body and its organs without opening or exposing the unprotected parts underneath.

By its formation the fatty layer is enabled, like a sponge, to take up, hold and release, as the case may be, large amounts of fluids, as happens in heart and kidney affections, which are so often followed by dropsical conditions.

The fat, which is deposited there in large quantities, also serves to give the body the roundness and fulness so necessary to make the "human form divine."

Such is the skin in which the hair is imbedded.

## Section 2

### *The Relation of the Hair to the Scalp*

Before describing the anatomical structure of the scalp let us see how the hair is imbedded in the scalp. If you keep in mind the structure of the skin, you will readily grasp the relation of the hair to the skin.

Imagine for a moment, that the scalp is a pillow and if you will thrust the point of your index finger deeply into the same, you will find that it is surrounded by the different covers of the pillow, viz: the outer washable cover, the inner one containing the feathers, and as a third envelope, the feathers themselves, which are contained in the pillow.

Your finger represents the hair, the washable cover of the pillow is the upper layer of the skin, the cover holding the feathers will be the middle or horny layer of the skin and the feathers themselves represent the third or fatty layer.

Imagine further, deep down in the depression your finger has made, a button fastened on the pillow, and you have a representation of the papilla or matrix of the hair from which it takes its origin, its nutriment and everything needed to fulfil its purpose in the life it is to live. The picture should now be clear to you. A depression lined by the three layers of the skin; at the deepest part of this depression a protuberance, called a papilla, out of which the hair develops; finally, the long hair shaft completely filling the depression, called the hair follicle.

The little swelling you have undoubtedly noticed at the lower end of your hair is commonly, but mistakenly, called the root; for it is not a root in the ordinary sense. It is simply an expansion, an attachment, which forms a comfortable connecting link between the hair and the papilla from which it grows and is called the hair bulb.

## Section 3

### *The Nature and Structure of Hair*

When we examine a hair by means of a microscope, we see that it consists of concentrically arranged layers of which, as in describing the anatomy of the skin, we will only mention the three most important ones, conforming to those of the skin, which surrounds the hair in the follicle.

The *upper* or horny layer has smooth, firmly packed, flattened cells, placed like the tiles on a roof upon each other to protect the hair from outside injuries. The protection is all the more sure as five cells overlap one another in the space of their own individual length, making a quintuple shield for every part of the hair shaft surface.

The free ends of these overlapping tile-like cells are turned upwards toward the upper end of the hair.

This arrangement facilitates the task of finding the point of the hair; when you hold it loosely between thumb and index finger, moving them ever so little up and down, the point soon appears between the fingers, as the projecting ends of the tiles help the movement.

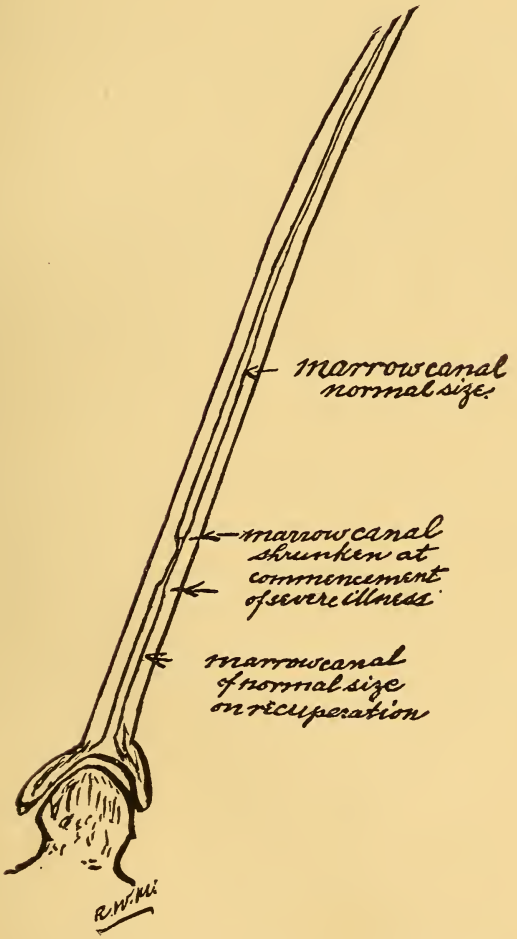


FIG. 2.—The Marrow Canal in the Hairshaft.

The *middle* layer of the hair, called the cortical portion (from cortex, i.e., rind) corresponds to the connective tissue layer of the skin, consisting as it does of long spindle-shaped cells drawn out and bound together lengthwise.

If it were not for these cells binding the hair particles closely together, the hair would soon break and be ruined by being subjected to the exigencies of the fashions of hairdressing.

When we use a lense magnifying 300 times or more, it is possible to discover that the cells of this layer do not bind themselves absolutely everywhere, but in certain locations leave openings, which are filled with an oily secretion from the glands found within the hair for this purpose, thus giving it its lustre and beauty.

It is well to explain right here in this connection the fact, that in case of serious illness and in some particular diseases of the scalp, this secretion dries up entirely, and soon after the lustre of the hair diminishes or disappears altogether, rendering it dry and lifeless and causing abundant scales to appear.

The *innermost* layer of the hair consists of two rows of large, firm cells lying side by side along the hair shaft, forming what is called the medullary or *marrow canal.*

Not every hair is thus provided, however; many have but two layers mentioned above, but a normal, healthy hair is by experienced observers found to have this marrow canal.

The very finest hair may be deprived of it, hair growing late in life also may be without it, but the strongest and healthiest hair is regularly thus provided.

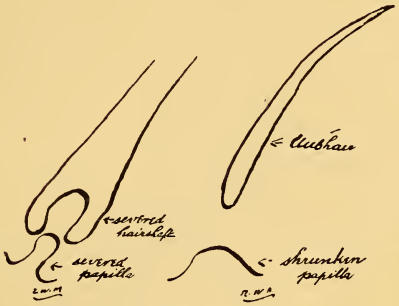


FIG. 3.
Showing change of Papilla after Hair dropped off.

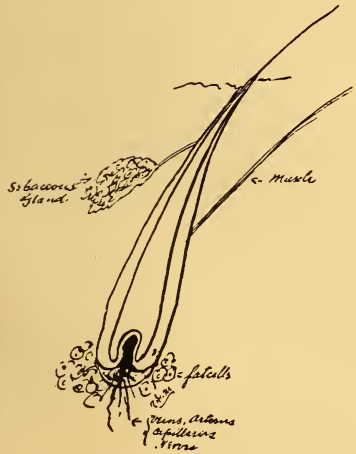


FIG. 4.—Showing Hair on Papilla.


FIG. 5.—Showing Hair ingrown on Papilla.

When severe illness occurs, we can find an intimate relation between it and the marrow canal. On looking at it under the microscope, we see the canal shrink to a diameter $^1/_4$—$^1/_{10}$ the size it was before. It will continue in this attenuated form as long as the illness lasts, and gradually, slowly, reassume its former dimensions when the body has regained its pristine vigor.

The knowledge of the measure of the hair growth and experience with the manner of estimating dimensions under the microscope, enable us to calculate with certainty the time which has elapsed *since* the patient suffered a severe illness, by examining one of the hair's medullary canal.

## Section 4

### *The Color of the Hair*

The color of the hair, blond, brown, red, etc., depends entirely upon that of the coloring matter or pigment deposited or dissolved in minute particles or corpuscles in the middle layer of the hair.

The intensity of the color, however, is regulated by the lesser or greater quantity of this coloring matter present.

Gray hair, so long regarded purely as a sign of approaching or premature age, is simply due to the absence or loss of pigment, or the presence of more or less air within the hair, caused either by sickness, worry, shock, severe mental strain long continued, or accidents to be mentioned later on.

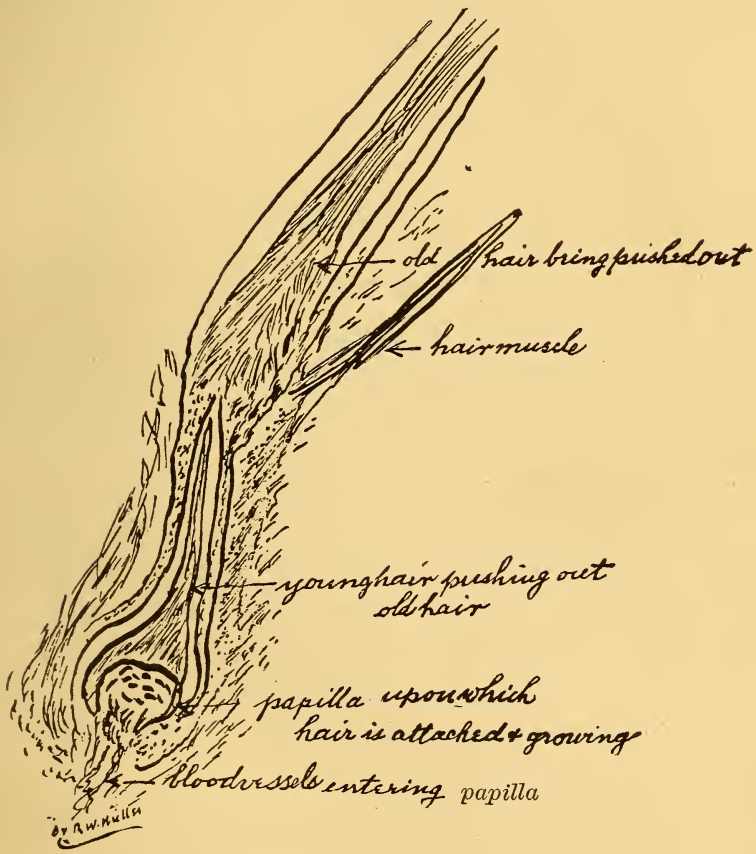


FIG. 6.—Showing young Hair pushing old Hair forward.

The change takes place at the growing end first and the natural color mixed with the colorless or white portion of the hair, caused by the presence of air in the marrow canal, accounts for the gray appearance.

## Section 5

### *The Contour of the Hair and Other Properties*

As the color, so the contour of the hair differs much, depending upon the degree of fineness.

Flaxen hair is the finest of all varieties, being only 1/1500 —1/500 inch in diameter, while black hair on the contrary with diameters of 1/450—1/140 is the coarsest.

The contour may be round, oval or flattened.

This regulates the curling quality of the hair; the more oval and flattened the hair may be, the prettier the curl; the rounder and the more circular, the less this quality.

As hair absorbs moisture from the atmosphere, the curl will be better, the moister it gets; the drier the straighter. Artificially curled hair, however, will not stand moisture at all, but loses its curl in moist weather.

I add here a few words about another peculiarity of the hair of which little is known.

The hair is very elastic, and can be stretched to ⅕ its own length. It also is possessed of sufficient strength to sustain the weight of two to four ounces without breaking.

Another interesting feature of the hair is its electric property.

Passing a rubber comb through the long hair of a woman causes a crackling sound produced by electricity.

In peculiarly susceptible people it will stand out straight from the scalp under the stimulus of electricity.

## Section 6

### *The Growth of the Hair*

The little swelling you may have frequently noticed at the lower end of your hair covered by some whitish, scaly matter, has been universally named the hair root.

The hair practically has no root. It merely has an expanding part at the lower end of the shaft called the bulb, which fits closely over the rounded surface of the papilla or matrix, from which all nutriment needed for its growth comes. There all the cells, every part of the hair structure is developed unceasingly, to replace old, worn-out cells and eventually the hair which has been pushed aside or has fallen out. There, nerves, blood-vessels, lymph, and everything else needed for its development, is provided.

The larger and better developed the papilla, the stronger and longer will be the hair growing from it. The bigger the expanded end of the fallen hair appears, the better is the chance of a strong hair following it; for in order to push and grow out of its follicle, the young hair has to move the old hair aside to

the wall of the follicle, or to push it forward in order to reach the daylight; a hair, loosened from its papilla, may still be lingering within the follicle and escape the fate of falling out for a long time, if it be not disturbed. The new hair may push it aside and keep on growing without removing the old hair from the follicle, both sharing it for some time till some rough agency, be it comb or brush or shampooing, massage or other strenuous work on the scalp, loosens the dead hair, which falls out in quantities, much to the surprise of their owner. Hundreds and hundreds of hairs thus fall out together. Every hair, however, must fall out some time to be replaced by a new one and to allow room for the following hair to grow.

The growth of the hair depends too much upon general conditions to give any exact account of it, but it is safe to say that a normal hair will take 14 days to grow 3⅓ lines or ⅓ inch.

On different parts of the scalp, and in different individuals, the growth varies considerably, while on the crown and the back of the head, hair may grow 45-50 inches in length; at the side of the head, 18 inches is generally the limit. The longer the hair the quicker it grows. Therefore, the quickest growing hair is on the crown and back of the head.

Of course, a man's hair does not grow as long as a woman's, it being rarely longer than eight inches.

The custom of cutting does not improve hair, on the contrary, latest observation proves that it retards the growth and makes it coarse. Nor does the hair always grow at the same rate, for after it has grown a certain length, say 12 inches, the

rate decreases by one half, and later towards the end of its life, one can scarcely observe any change whatever.

The finer the hairs the closer they will be on the scalp; the average, however, is 1,000 to the square inch and 120,000 on a normal scalp.

In middle life the hair grows fastest and most vigorously, while after 35 it does not grow to its full length any more, except in rare cases; after 60 years only short hair will grow.

These conditions obtain in healthy and normal persons. Ill health and abnormal conditions change matters considerably, as I shall demonstrate in later chapters.

# CHAPTER II

## Affections Causing Alopecia (Baldness)

### Seborrhoea

### *Anatomical Demonstrations of Seborrhoea*

In order to make my readers fully understand the meaning of seborrhoea (dandruff) and to show how this disease invades the human scalp and insidiously destroys hair, hair follicle and hair bulb, I have drawn a few pictures (after Sabouraud) and accompany the same with suitable explanations.

Like all other diseases of the skin, seborrhoea is due at first to some minute lesion of the skin, which is called "primary lesion."

In seborrhoea this lesion is the little thread, or, as Sabouraud calls it, filament, which can be squeezed out of the hair follicle by the pressure of the thumbnails or some suitable instruments the physician uses.

This secretion of the glands within the hair follicle is constantly discharged in increased quantities, gradually covering the area surrounding this hair follicle and spreading beyond until ultimately, when no curative remedies are employed, the crown of the head, the temples and back are covered with a greasy mass, disgusting to see, hard to get rid of, and destructive to the hair.

## Section 1

### *The Different Forms of Baldness*

Alopecia is from the Greek word Alopex (fox). The name is given to this affection from the resemblance of a bald head to that of a fox suffering from a disease, called mange.

I shall mention but three varieties of baldness in this chapter. Other forms will be mentioned in later chapters.

The first variety, *Alopecia adnata* (or congenital baldness), explains itself in the name. It may be total or partial. It is often hereditary, and is caused by arrested development of the hair-growing apparatus.

The second form, *Alopecia senilis* (or senile baldness), comes with old age after 45 years and is due to diminished nutrition and lowering of the vitality. When recognized betimes much may be done to ward off the evil day of complete baldness by preventative and invigorating treatment. If once established, senile baldness is incurable.

The third variety, *Alopecia praesenilis* (premature baldness), is of greater interest to us than all others, as we can hold out hopes of help and improvement, and even absolute cure, if called upon at an early stage of this disease.

This premature baldness may be either *idiopathic,* that is, self-originating, or *symptomatic,* that is, caused by some local or general disease.

When it is self-originating, appearing without cause, it does

so before the 45th year, the hair gradually, almost imperceptibly, diminishing at both temples, at the top of the head, and thinning all over the scalp.

Symmetrically on both sides and on the vertex towards front and rear, baldness spreads until the disease has reached its climax, when no further hair loss is noticed, a fringe of hair being left reaching from front to rear.

Should any new hair appear, we find it thin and colorless, not much better than down found on other parts of the body.

The other form of premature baldness which we have named the symptomatic, because due to general or local disease, requires a more lengthy discussion, as it is the form which most frequently comes under observation and destroys more hair than any other disease known to us.

The diseases which most often cause this variety of baldness are *Seborrhoea* (dandruff), *pityriasis* and *syphilis*.

All these are of the nature of scaly diseases and much confusion as to their names and origin exists in the text-books even to this day. For this reason I confine myself to the description of the most common of these diseases, Seborrhoea, or, as it is often called, dandruff.

## Section 2

### *Seborrhoea (Dandruff)*

Seborrhoea, of which two forms are known, the oily (*oleosa*) and the dry (*sicca*), comes on insidiously at the age of puberty.

Silvery scales are seen on the collar and coat of young people of both sexes, occasionally the scalp itches—and has to be scratched, bringing down more scales.

On observing these young people closely, their faces seem oily, particularly the forehead, nasal fold and chin. An abnormal amount of secretion oozes out from the glands.

On examination, the scalp is found to be covered with greasy, dirty scales, which being removed uncover a slightly reddened skin.

If we press tissue paper firmly upon the scalp, a greasy stain appears. On pressing with thumb nails upon the surface, first a drop of oil is squeezed out and this is followed by a worm-like filament with a yellow head. This condition proves that the patient suffers from *oily* Seborrhoea.

Should the patient in this condition go on for 4-6 years or more without the proper treatment, trusting himself to the prodigal use of hair tonics, hair washes, shampoos, bay rum and other alcoholic mixtures, a stage will be reached which admirably pictures the condition we find in *dry* Seborrhoea.

The scalp instead of being oily, is now dried up, the hair has lost its lustre and gloss, scales, though not so many as in the former condition, cover the scalp and are found scattered through the hair.

The hair has grown thinner and continues to diminish.

The temples become more and more uncovered, the forehead higher, a thinker's forehead develops, giving the sufferer the appearance of a wise and studious man. Finally the bald-

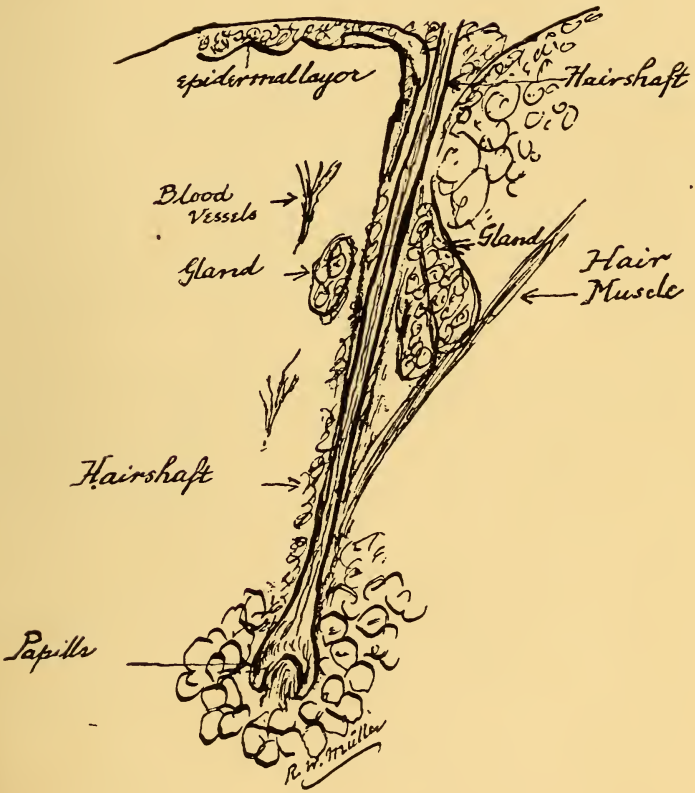


FIG. 7.
Showing Hair in Follicle with Glands and Muscle.

ness invades the top of the head and symmetrically spreads to front and rear, leaving an island, a tuft of hair over the forehead as a memento of pristine glory.

Before proceeding to the discussion of the treatment of this disease, I wish to state the fact that the origin of Seborrhoea has been the object of the most diligent research for the last ten years by Dr. Sabouraud of the St. Louis Hospital of Paris as well as by the famous dermatologist, Dr. Unna of Hamburg.

Both agree that a microbe, which Dr. S. calls "microbe à bouteille," and Dr. U. "flaschen bacillus," on account of its resemblance to a bottle, is the cause of the condition called Seborrhoea.

This microbe is believed to invade the follicles from which the hair issues forth. There it multiplies enormously and by its presence in large numbers obstructs the mouth of the glandular ducts, fills up the follicle, presses upon the tender new hair and its bulb, and finally destroys the follicle utterly.

It was through the kindness of Dr. Sabouraud, whose clinic I visit annually for some weeks, that I was enabled to explain his theory of the origin of Seborrhoea by some sketches I made for this little book, which are found with elucidating descriptions on the first four pages of the chapter.

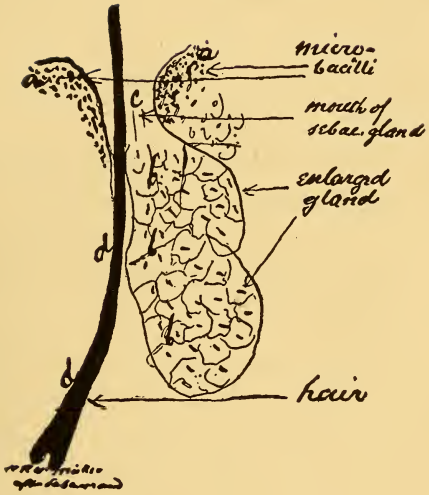


FIG. 8.

In Fig. 8 I have tried to demonstrate at *a* the invasion of the microbe, which is supposed to be the cause of the gland secreting abnormal amounts, irritated by its presence; *b, b, b* shows the sebaceous gland many times enlarged.

At *a, a* are the microbes; *c* is the exit of the duct of the gland, through which the secretion is poured into the hair follicle; *d, d* is the hair in unchanged form, as disease has not progressed far enough to injure the growth of the hair.

## Section 3

### *Treatment of Seborrhoea for Ladies and Girls*

It is a great pity that this disease is so often discovered too late to be benefited by treatment.

More often, through wrong and injurious treatment, valuable time is lost and great harm done to the scalp.

In the case of ladies, greasy pomades and ointments must be avoided if possible, although some cases cannot be treated effectually without their use.

Alcoholic solutions recommend themselves as the best remedies in oversecretions of the perspiratory glands of hands and feet; therefore we employ them and successfully in the oversecretion of the glands in the hair follicles, which is exactly the condition of affairs in Seborrhoea.

The Alcoholic Solution of Salicylic Acid applied in the manner to be described, at the right time, and according to the severity of the disease, will do a great deal to improve the condition of the scalp and the hair.

To apply this remedy correctly, a wad of absorbent cotton or a soft toothbrush must be used; a painter's brush or a child's hairbrush will also answer the purpose.

To proceed methodically, part the hair once through the middle and then again twice at equal distances from side to side as shown in following sketch.

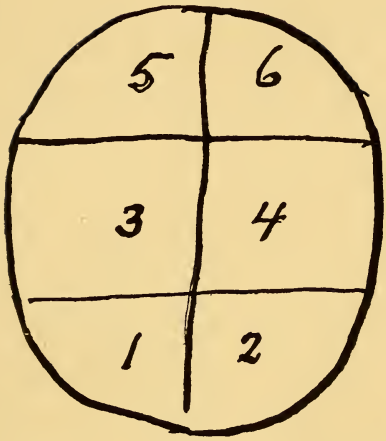


Fig. 9.—Division of Scalp for proper Treatment.

Now use the solution in this manner: Pour a sufficient quantity in a saucer after the hair of the patient has been parted in the middle and commence, say, for the sake of example, to treat the front section of the right side for the first day.

Dip the cotton wad or brush into the fluid, raise a strand of hair and rub the fluid thoroughly into the exposed surface of the scalp for two or three minutes, then proceed to the next layer of hair, maybe ½ inch further to the right, and do the same, layer by layer, down past the ear and as far as the scalp extends.

If you have taken the forward row of hair, follow in the same manner on the second and third row until you reach the imaginary border line of the first section.

It should take at least thirty to forty minutes to do this work with any degree of thoroughness and to expect good results.

After thoroughly cleansing the scalp of the scales with which it is covered, we can test the work done by using a bit of cotton on a comb and going slowly through every part of the scalp, using a fresh piece of cotton each time.

The cotton will show clearly whether the ridding the scalp of all the scales has been accomplished. For, should the cotton on the comb show greasy marks caused by the scales still left behind, the parts neglected must be done over again until every portion of the scalp has been freed from them.

However, all efforts to do this unfortunately prove futile in some cases, and more severe measures are necessary and one must resort to the specialist.

To free the head absolutely of its thickened layer of scales (dandruff), sulphur must sometimes be employed.

The thick layers of scales consist, as I have explained before, of decayed horn cells of the upper layer of the skin (and scalp).

Sulphur attacks this mass energetically, and soon dries it up, and peeling off, leaves a new, regenerated, normal field for hair to grow and develop on.

This sulphur lotion must be used with great caution, as must indeed every other remedy, since the scalp is in an abnormal condition and is easily inflamed by irritating applications.

I can therefore only caution those who suffer from seborrhoea not to do anything without using great discrimination and care, and whenever in doubt to ask the specialist, in order to accomplish their object without injury to their hair.

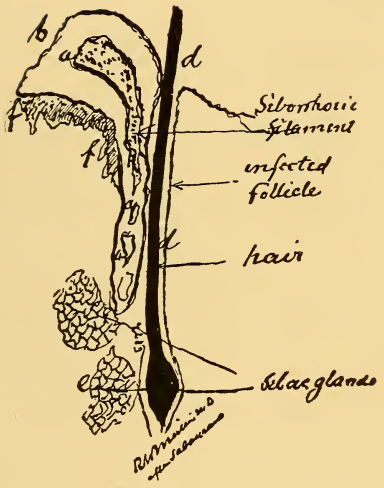


FIG. 10.

Fig. 10 represents the seborrhoic plug *b*, nearly filling up the mouth of the hair follicles; at *a* can be seen the colonies of microbes incased in the plug; at *f* the epidermal or upper layer of the scalp is visible; at *e* the sebaceous gland is seen.

Here follows a prescription for a sulphur lotion to be employed in case other remedies used have not effected a cure.

℞. Florum sulfuris. ..... 10.0
Spiritus vini ..... 100.0
Glycerinae gtt. ..... 10.0
Spir. Colon. ..... 10.0

(This mixture, containing alcohol, must not be used near flame.)

This lotion is used in the following manner:

The solution having been put into a deep dish or saucer the hair is again separated into six parts in the way previously described.

In a few minutes the sulphur will have settled at the bottom of the dish and the yellow sediment may now be transferred by means of a brush over the affected portion of the scalp.

To do this thoroughly should take two to three hours, and it is much better to take several days to do it properly.

The physician is the proper person to apply this lotion, as he alone is able to judge what amount and what strength of the remedy it is proper to use in each individual case.

Also the location to which it is to be applied can only be recognized by the experienced eye of the physician, while the inexperienced frequently overlook diseased patches of the scalp and thus the disease is perpetuated, reinfecting other and healthy parts of the scalp ad infinitum.

After five to eight days the scalp must be reinspected, and more lotion applied, if the sulphur has disappeared.

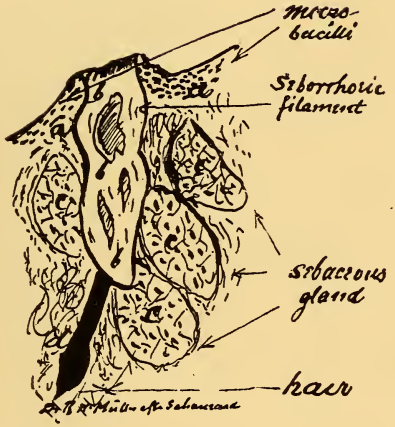


FIG. 11.

Fig. 11 shows the entire plugging up of the hair follicle, making a complete stop-gap of the filament *b, b, b.* At *a* colonies of microbes are represented; enlarged sebaceous glands are seen at *c, c, c,* and *d* finally shows what is left of the hair itself.

Traces of sulphur will still be seen eight and ten days after the first application, but nevertheless fresh sulphur should be applied whenever needed or wherever it has disappeared.

Another week may then be permitted to go by, when a further close scrutiny is necessary and so on until the skin peels off in flakes, and a new one begins to show.

It takes three to four weeks before any improvement shows.

Where the itching has been annoying, it will be found to have disappeared a few days after the commencement of this treatment.

Hair will, however, continue to fall out for weeks before improvement will definitely set in.

Sulphur being an irritant and not well borne by every one, other treatment has often to be employed.

In such cases we prescribe as follows:

1, ℞. Acidi Salicylici .....1.0
Spiritus vini .....200.0
(Not to be used near open flame.)

Fiat solutio.

2, ℞. Florum sulphuris .....1.5
Vasilini flavi .....30.0
M. fiat unguentum.

These two remedies are to be used alternately, or, better yet, the salve should be rubbed in two days in succession, and the third

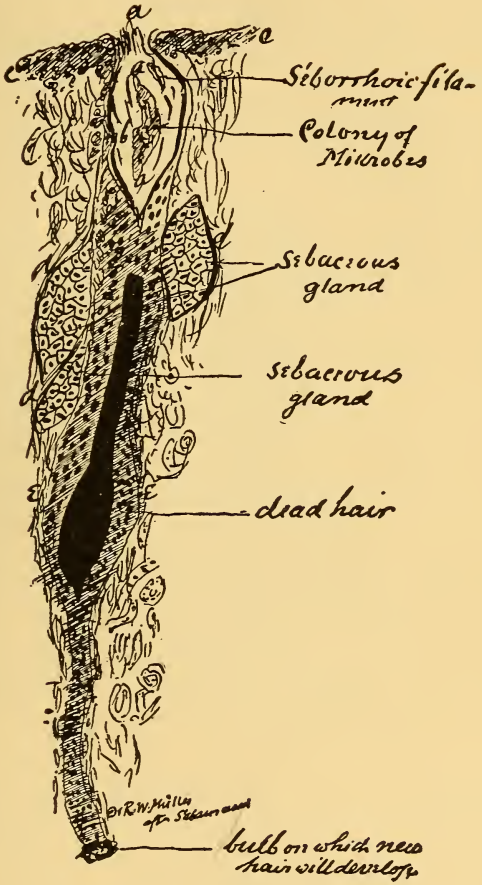


FIG. 12.

Fig. 12 demonstrates in a comprehensive form the state of affairs in a typical case of Seborrhoea of long standing. At *a* a spigot of sebaceous matter occludes the hair follicle and microbes *en masse* are contained within at *b, b.*

Sebacious glands, considerably enlarged, surround the shaft of the hair, which lies loosely, dead, forlorn and useless in the deeper portion of the follicle, waiting to be shoved up to daylight and out of the follicle by the new hair, which may grow up as far as the resting point of its predecessor, soon to die like it from want of nourishment.

day the solution. This must be kept up for six weeks, when improvement is sure to follow.

We then prescribe some such hair tonic as the following:

℞. Acidi Salicylici .....1.0
Resorcini .....1.5
Spiritus vini. .....100.0
(Not to be used near open flame.)

or,

℞. Acidi Salicylici .....1.5
Resorcini .....1.0
Spir. Frumenti. .....100.0
Spir. Colon. .....100.0
(Not to be used near open flame.)

Also the newer but somewhat irritating remedy, Formalin, is worthy of trial in such cases. As:

℞. Formalini .....2.5
Spir. vini .....100.0
(Not to be used near flame.)

or,

℞. Formalini .....5.0
Vasenoli .....100.0

M. S.—Use only twice a week. This will end the treatment of seborrhoea when ladies are affected by it.

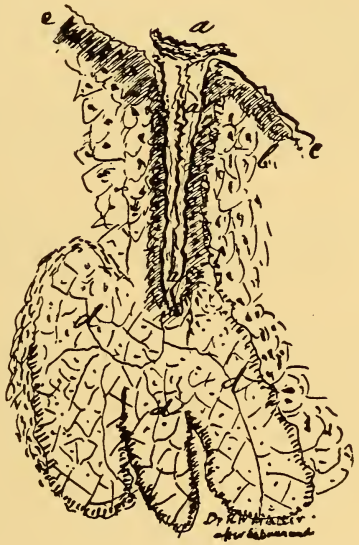


Fig. 13.

Fig. 13 is the picture of an extreme case. Here we see proportions the sebaceous glands may assume when the disease makes rapid strides in destruction of hair, hair follicle and hair bulb, leaving no ground for any further development of the hair whatsoever.

## Section 4

### *Treatment for Seborrhoea (Dandruff)*
### *Men and Boys*

Altogether different is the case when dandruff is found on the scalp of boys or men.

Their hair being kept short is easily cleaned, and heroic measures enable us to shorten the process of treatment considerably.

The most effective and drastic treatment is that with *"Hebras Spiritus Saponato Calinus,"* as the drug stores keep it for sale.

A tablespoonful of this pleasant mixture is poured upon the head, followed by a tablespoonful of hot water. Rub both with gentle motion into the scalp, follow it up with one more tablespoonful of the soap and water, and keep up the rubbing until an abundant thick lather and foam appear, covering the entire head which is then left for ten minutes undisturbed, to soften and mix with the decayed scales of the epidermis of the scalp in order to macerate them.

After this interval the entire mess, scales, soap, grease and impurities are all united and washed off the scalp by an abundant supply of hot water. The more water is used the better the result will be. It is best to follow this up with gradually cooler water.

Another convenience in the treatment of male patients is the possibility of applying the sulphur lotion immediately after the

washing off of the scales has been effected. But at the same time I prefer in my practice not to follow the washing of the scalp immediately with the sulphur treatment.

It is much better in these cases also to divide the hair in four parts at least, and let the patients be content to have a fourth part of the scalp treated at a time for four consecutive days, and on the fifth day use Hebras Tincture of Green Soap again and so on, until every suspicion of scaling has disappeared for good and all.

Male patients will be aware of the improvement going on by observing a diminution at first, and later a cessation of all scale formation.

While some hair still falls out beyond the normal amount, it must be remembered that the rubbing of the scalp necessary for cleansing and drying is largely responsible for loosening it.

In four to six weeks the treatment of such cases is generally concluded, unless complications have arisen, or the rules have not been followed closely, or, as Sabouraud says, the hair follicles having been invaded by the microbes, these are, in this secure hiding place, inaccessible to any remedy available for their destruction.

In concluding this chapter I repeat that numerous hairs will be removed at the beginning of this treatment of Seborrhoea through shampooing and the mechanical friction of the scalp in applying remedies. However, as it is only the diseased hair that is falling out and which would soon come away of its own accord, the patient need not be alarmed by it.

After the treatment the hair may become dry and brittle, and should have a very little pure olive oil applied, which will lubricate it.

This treatment carried out faithfully, patiently and intelligently will stop the loss, and in many cases will bring about a new growth of hair.

Where this is not achieved further treatment will be necessary by advice of the physician, who alone can decide what may be of further benefit.

Other forms of baldness caused by different diseases will be described in Chapter III.

# CHAPTER III

## OTHER FORMS OF BALDNESS

### SECTION 1

*Alopecia Pityrodes Universalis, or Universal Baldness*

This is a rare disease, closely related to the Seborrhoic baldness described in Chapter II, only more severe, and, as its name says, a form of total baldness.

It is characterized by the formation of abundant fatty scales upon the scalp similar to those we have seen in seborrhoea, which condition is followed in a short time by a perceptible thinning of the previously thick and abundant hair covering the scalp.

Other hairy parts of the body are similarly affected very soon after in the same manner, and, when the disease reaches its climax, the whole body is practically denuded of hair.

Some parts of the body seem more prone to this disease than others, and only by close examination do we discover that the skin is not entirely deprived of its hairy covering, but has retained those minute, colorless lanugo hairs which cover the entire human body, excepting the soles of the feet and palms of the hands.

We find also that the hairy scalp is not less movable than before, and shows no signs of irritation, redness or other symptoms, except the enormous mass of scales mentioned.

When we ask ourselves what might cause such tremendous hair loss as to frighten the patient, his family and friends, and even the family physician, unfamiliar with such a state of things, we have to look for general conditions altogether, as no local agent whatever, microbic or parasitic, has ever been known to do such extensive damage in an equally brief period of time.

However, there are conditions known to medical men, which will explain such results.

Take for instance the deep and long exhaustion, following a severe type of typhoid fever, where the pulse is unusually fast and weak, the temperature higher than is seen in ordinary cases and the loss of blood from the infected ulcerated bowels alarmingly large; consider the low ebb of the circulation caused thereby, the withdrawal of the normal blood supply from all regions of the body far distant from the heart, the vicious condition of this diminished blood supply and the consequent starvation for want of the nutriment needed for the repair and regeneration of tissues in our body; when all these facts are considered it will not be strange if the hair comes out in "handfuls," now that the bulb and follicle within which the hair develops shrink and lose their hold upon the hair which is thus removed by the slightest mechanical force such as a brush or a comb will exert.

Other diseases, such as cerebro-spinal meningitis, tuberculosis, syphilis, diabetes and severe operations, particularly such as are performed upon the bowels and other abdominal organs, might be mentioned as of the kind which may be followed by this alopecia pityrodes universalis, or universal baldness.

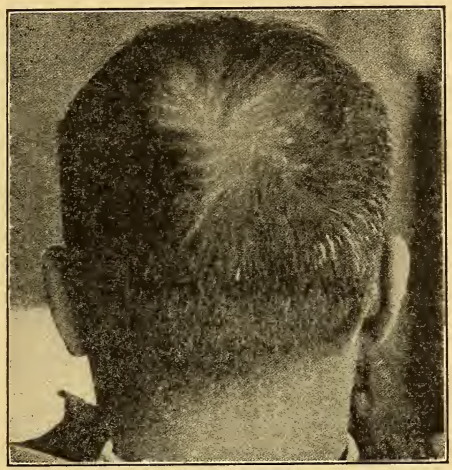

FIG. 14.

This plate and, to a great extent, Plate 15 also, represent the first suspicion of coming baldness.

From a little bare center an inch or less in diameter radiate lines to all directions, which show a diminution of the growth. Hairs, whose follicles were invaded and attacked by the microbacillus of Seborrhoea, have fallen out without being followed as yet by new ones.

A great deal can be done at this stage to stop the progress of the disease. The hair may be saved as long as the follicle in which it grew has not been entirely taken possession of by the filament of Seborrhoea and the invading army of microbes nesting within. Further progress into wider areas can be averted and the enemy driven from the field.

In regard to treatment for this great hair loss, I am happy to state that the result is much better than might be expected, as the hair will grow again.

The physician will prescribe a plain nourishing diet adapted to the case, giving attention to such articles of food as are known to accelerate the growth of hair; medicinally, iron is the most useful; and for local treatment, a hair tonic like the following might be used with advantage.

℞. Resorcini ..... 5.0
Ol. Macidis ..... 1.0
Ol. Ricini ..... 2.0
Spir. .....200.0
Aq. Col. ..... 20.0

D.S.—Rub in scalp every morning with a small sponge.

Having finished the first section of this chapter, I shall now, in the second section, describe a very common form of baldness, which we see everywhere in families, assemblies and in public places generally, which has caused distress and despair in many a young man's heart, has driven thousands into the open arms of hairquacks since time unknown, and has been a prolific source of income to every designing druggist, anxious to empty his shelves of superannuated compounds, elixirs, tonics, hairwashes, scalp invigorators and the like, which has enriched and made to wax fat the masseurs and masseuses of the human scalp, the proprietors of vibrating machines, electric or otherwise, with which the long-suffering scalp has been maltreated, certainly not to the profit of the anxious victim.

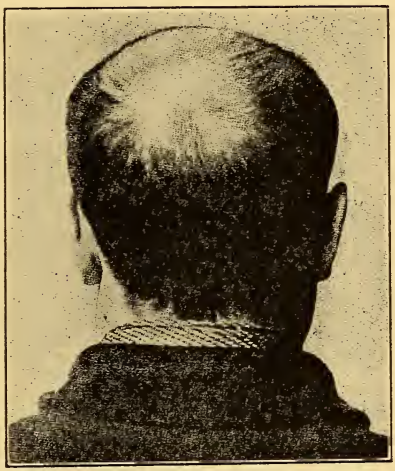

FIG. 15.

This plate shows plainly that the patient has had no warning, or has not taken any warning from what was going on and allowed the disease to run its course. Or he was wrongly advised, and instead of improving, his condition is getting worse.

He can only be prevented from becoming bald by active measures and by following strictly the rules laid down by experienced advisers.

## Section 2

### *Alopecia Praesenilis—Premature Baldness*

Exactly as in the case of hair growing prematurely gray, where the specialist by means of the microscope discovers signs of degeneration, so in premature baldness do we see this condition gradually supplementing the healthy normal state of the scalp and hair.

Unfortunately for the persons affected, there is no premonitory scaling indicating the earliest stage of the disease, nor does an excessive greasiness of the scalp warn the patient of the threatening disaster.

Nay, quite the contrary prevails; the scalp is very often clean and healthy in appearance, and such scales as do form are only the normal number which any healthy scalp may show.

In this disease gradually, surreptitiously the hair becomes thinner until some day a bald spot appears on the vertex; but the spreading of the bald area continues until the entire central portion of the cranium becomes denuded, leaving merely a fringe of healthy hair over both ears and at the occipital (back) region, as a memory of bygone days.

Of course, I describe here an extreme case, one in which heredity, combined with habits injurious to the growth of hair or a debilitated system, plays an important part.

Generation after generation, on the male as well as on the female side of the family, there may have been members who

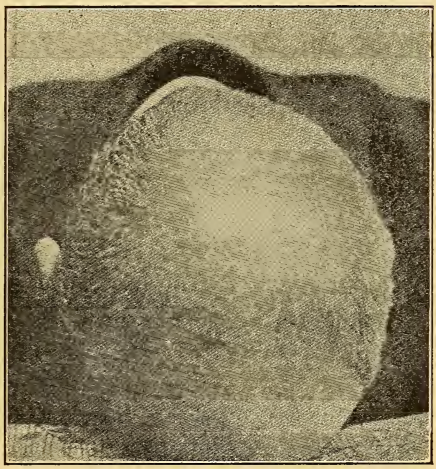

FIG. 16.

Here we see Seborrhoea going on "right merrily" and gradually accomplishing what it set out to do. At this stage no tinctures or lotions or salves will avail anything. The time for remedial treatment went by long ago. Just as well you might try to raise hair upon the polished surface of a billiard ball.

My advise to those who ask me for it at that stage of the disease, is to buy their hair ready made—a wig.

were bald, and the disposition to grow bald may have been inherited by more than one member of a family, never quite denuding the female scalp to such a degree as the males, but still weakening its growth, shortening the hair, thinning it, and causing it to turn gray earlier or fall out freely, beyond the normal limit, and finally also causing mere lanugo (wool) hair to grow on top of the skull in place of the long hair at the back and side of it.

### *What Predisposes to this Disease*

Much depends upon the condition of the individual health, when the question of preventing total baldness comes up, after the first stage, when abnormal hair loss is noticed.

Poorly nourished, anæmic, dyspeptic young men and women will need careful remedial measures for internal as well as local treatment.

In March and April, also in September, more hair than usual falls out, as happens also in the case of animals who renew their hairy covering before the winter season sets in.

If the scalp should be maltreated at such times in any way, for instance, by too frequent douches or application of water, or the hair be allowed to dry up too much for lack of the oily secretions suppressed by such measures, it is almost sure to be followed by an abnormal loss of hair.

Add to this the habitual wearing of tight hats and caps compressing the vessels intended to carry blood to the roots of the hair, or the senseless, frequent cutting of the hair, which has

FIG. 17.

This plate demonstrates an entirely different form of baldness; form, I say, because it only differs in that particular, attacking the temporal region of the skull on both sides, the microbacillus having found this locality more convenient for attack.

The forehead is gradually getting higher and broader, giving the man an appearance of superior wisdom and deep thought; but not deservedly.

Had he been a deep thinker, he would have thought how to save his hair and whom to consult about it.

Also note in this picture the beginning of the invasion all over the crown of the head and how the hair is getting thinner and "beautifully" less.

long been proved to be injurious to its growth, the application of an inordinate amount of fat, oil or pomade, hard study, late hours, improper and insufficient food, and you have a series of factors well calculated to ruin the most beautiful crop of hair that ever adorned a human skull.

While in the form of baldness described in the preceding section (Universal Alopecia) a speed recovery may be promised if the treatment is properly and timely applied, we cannot do as much in this chronic form of premature baldness.

### *How to Prevent Total Baldness*

Only the most assiduous care can prevent absolute and total baldness (saving the fringe left over ears and at back of head mentioned above), especially as this insidious affection is rarely discovered early enough by the patient. Friends and acquaintances in most cases call the attention of the victim to the threatening disaster, and then perhaps may add insult to injury by recommending some useless or injurious hairwash.

I put particular stress upon this fact, while talking of the treatment of such cases, that charlatans, hair-wizards and quacks have for hundreds of years made this their special field, advertising unceasingly their wonderworking compounds, impossible and incomprehensible mixtures of bearfats, herbsoaps, greases gathered from sheepcombings, horses and cattle, etc.

We have in such cases to consider the whole body of our patients just as we do in the case of other chronic wasting

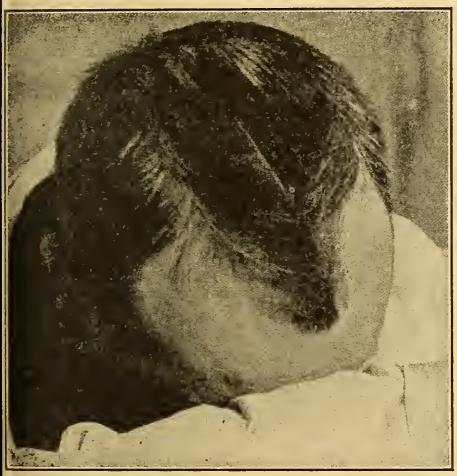

FIG. 18.

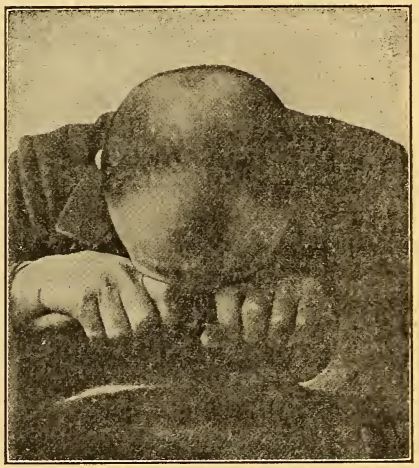

FIG. 19.

These illustrations show the same form of Seborrhoea attacking the hair on both sides of the forehead, leaving a peninsula jutting out into the middle, forming a gulf on either side, thus making the bareness of both temples more pronounced.

diseases, and have to try to discover the hidden cause which destroys slowly but surely the entire hair-forming apparatus.

Only a careful examination by the microscope and similar means enable us to establish the fact that no parasite, fungus, baccillus or microbe is at work, but that we have a simple case of premature baldness which, without external symptoms beyond the loss of hair, is caused by degeneration, decay and death of the hair bulbs and its accessories.

The intensity of the disease when it has reached the later stage is shown, as above said, by the increased loss of the down or wool hair covering the scalp.

This condition of things is reached in the second and third years of the later stage, when in place of long, normal hair, thin, colorless, short, shiny lanugo or wool hair takes its place.

When the question comes up, what should be done in this later stage to ameliorate the condition of our patient, the specialist is compelled to explain what nature can do for him.

Here is my opportunity to discuss that interesting subject, so little understood by the laity, the regeneration of the tissues in the human body.

## Section 3

### *Regeneration*

Every part of a living organism maintains itself against external influences, which attack it constantly in its normally healthy and vigorous condition, or better expressed, in its integrity, only by the fact that it is enabled either to resist these

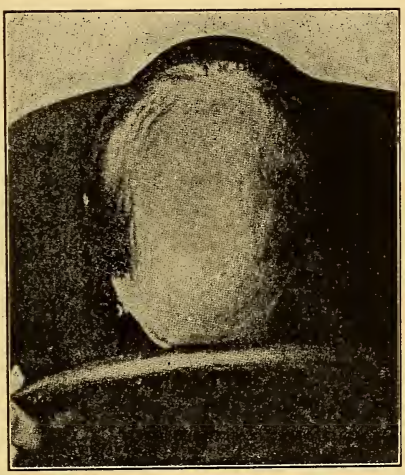

FIG. 20.

Here we see a typical case of baldness due to Seborrhoea on the crown and temples. The hair which is left standing has lost its normal condition as to quantity and appearance.

It is thin, short, without lustre, and will neither serve as adornment nor as protection very much longer, being doomed to fall early.

In all probability this patient will save for his old age a little fringe of dead, dull looking hair, scarcely visible below the brim of his hat, a reminder of former glory.

My advice to him would be like unto that given to Fig. 16.

external influences or to overcome the effect of the same and to regain its former healthy normal condition.

The ability to make reparation is a fundamental faculty of each and every organism or cell, and its occurrence is at the same time a proof of its vitality.

If some part of the human system is constantly assailed by adverse, inimical, injurious influences, the result will be the gradual loss of its ability to resist such attacks, as its power of resistance is diminishing more and more. Therefore this part of the system will perish before its time, because it can no longer resist attack. That is clear.

There is no standstill in the human nor in any other living organization. It either progresses or recedes. This means there is either repair from injuries received, or death of cell, tissue and organism. It is no longer able to regain its former shape, consistency or vigor.

Furthermore, when the declining plane, the receding direction, has been taken, its pace will quicken more and more towards perdition, the end, decay.

This explains to the lay mind the reason why chronic diseased conditions, having existed some time, having caused changes in the minute organisms involved, can only be arrested with the greatest difficulty and why complete return to the former healthy and normal state can hardly be expected!

Hence, this should be a warning to those who read, to seek help early in the first stage of the disease and to avoid the hopeless condition of the chronic stage!

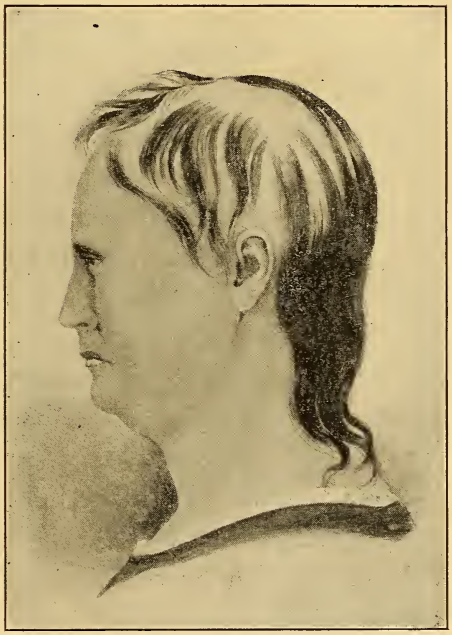

Fig. 21.

A Case of Premature Baldness in a Young Woman.

### *How These Rules Apply to the Hair*

When we apply these fundamental laws to the process of chronic diseases of the scalp, it follows that as soon as a great part of the hair after many months and years has lost its original diameter and has become thin, short and colorless like down, which covers the other parts of the human body, it will only be in the rarest instances that improvement can be expected. Nor would it be fair for the specialist to promise a retention of the present crop of hair for any length of time, for the law of nature explained above says distinctly that, once the retrogressive has been taken by any organism, it will continue in that direction to the end. Hence the hairbulb, the organism evolving the hair within the follicle, having started to send forth downy hair, thin, short and colorless, will continue to do so until it shrinks and stops growing hair altogether.

Thus it is, that we are placed in the position, when asked for help at that stage of the disease, to say, there is no help in cases where the downy hair has usurped the place of the normal hair, but that part of the scalp which is still on the boundary line between the first and second stage can be saved from entering the second stage, and long hair can be made to continue to grow from the follicles not yet involved, having escaped the inroad of the disease thus far.

Furthermore, parts already affected by the second stage can be influenced to the extent of warding off the progress of the disease for years.

Combining therefore both methods mentioned, we can prevent baldness of one part of the scalp altogether, and in another part we can put off the evil day from 10 to 15 years. Finally, we can, by the exhibition of proper and effective scalp lotions, overcome the weakened condition of the entire hair-growing apparatus, bloodvessels, bulbs, nerves and all.

## Section 4

### *Treatment of Premature Baldness*

The internal treatment of premature baldness consists largely in the use of minute doses of such remedies as arsenic, which can only be prescribed for each individual case after careful examination as to the ability of the patient to take this dangerous drug. Iron and cod liver oil are in some cases our mainstay in the successful treatment of this disorder of the hair.

Externally, a larger number of medicines are at our command, and the choice is simply made according to individual conditions.

I mention below a number of excellent mixtures with directions as to their use:

℞. Tumenoli Ammonii.

Saponis viridis ana ..... 5.0
Tincturæ Benzoes ..... 3.0
Vasilini albi optimi ad .....50.0

D.S.—To be rubbed into the scalp gently every evening.

The following morning wash off this salve with warm water and a neutral soap (Castile) and use:

℞. Acidi Acetici crystallisati.
Formalini ana ..... 5.0
Pilocarpini hydrochlor ..... 1.0
Spiritus Lavandulae ad .....250.0

M.D.S.—Rub into scalp.

Use this latter mixture thoroughly, because it is to have an irritating effect upon the scalp; or use:

R. Chloralis Hydratis.
Resorcini.
Acidi Tannici ana ..... 3.0
Tincturæ Benzoes ..... 1.5
Olei Ricini ..... 5.0
Spiritus Rosmarini ad .....100.0

or,

℞. Liquoris Carbonis detergentis anglici.. 10.0
Acidi Salicylici ..... 4.0
Ol. Ricini .....5.0-10.0
Tincturæ Benzoes ..... 2.0
Spir. Coloniensis ..... 50.0
Spir. Lavandulae.
Spir. Rosmarini ana ad.....200.0

or,

4, ℞. Resorcini ..... 2.0
Tinct. Cantharid.
Glycerini.
Spir. Lavandul ana ..... 3.0
Ol. Ricini ..... 1.0
Tinct. Capsici.
Pilocarpini hydrochlor. ana ..... 3.0
Spir. Lavandulae ad .....100.0

All these headwashes, or more properly called scalp lotions, must be energetically employed upon the denuded surface, as their purpose is to exert a strong irritative influence upon those parts of the hair which are beneath the surface, viz., the follicle, the shaft and the bulb of the hair.

When using Prescription No. 2, special care should be used, as the acid it contains attacks one individual's scalp more than another.

The same caution should be observed when using the following scalp lotion:

5, ℞. Acidi Tannici ..... 5.0
Spir. rectificati.
Spir. Sinapis ana .....10.0
Aq. Coloniensis ..... 2.0
Spir. Vini Gallici .....80.0

Some cases may be more readily benefited by the use of such combinations as the following:

6, R. Cantharidis (macerati) ..... 7.5
Ol. Bergamotti ..... 0.5
Paraffini liquidi .....90.0

M.S.—Rub into the scalp twice a week.

However we must frankly confess that even after the use of every one of these well-tried and highly recommended lotions, which are carefully and scientifically compounded for just our purpose to stop the loss of hair and to promote the development of new growth thereof, it will frequently occur that the result is small and far off. Great patience and endurance are needed and incessant efforts must be made, the physician's orders strictly followed in every particular, and above all the patient's hopes not raised too high.

## Section 5

### *Cicatricial Baldness*

This form of baldness is not so frequently met with, but deserves mention in order to make my description of the different varieties more complete. It is a localized baldness, not general, and is causd by the purulent inflammation of the hair follicles and resultant scars formed upon the scalp. I can best give you a description of it by relating the condition of one of the few cases I treated last fall, which was a perfect type of this disease.

*What It Means*

A young gentleman was sent to me by the Laryngologist of the German Hospital, whom he had consulted about some disease of the nose. On inspection I found on his scalp here and there some small swellings the size of a pea, and some larger. They were easily found, as they were surrounded by bald spots which formed the circumference of the nodules. On cutting down into the most vicious looking swellings, pus appeared which was removed; then the wound was thoroughly disinfected and a salve containing Salicylic Acid prescribed to be applied at bedtime.

*Description of a Case*

The sores were all opened and treated in the same manner on two other subsequent visits at my office and healed readily, leaving a scar devoid of hair. The microscopical examination showed clearly the invasion of the hair follicles by the common bacillus, streptococcus pyogenes aureus, causing putrefaction. For subsequent treatment, to avoid a return of the attack, I ordered an antiseptic scalp lotion.

The single follicles were of course destroyed and became cicatricial tissue, precluding the possibility of hair growing in the future.

This infectious disease of the scalp is found in young and old people, male and female, and aside from causing a few bald spots on the scalp, causes little or no discomfort. The periphery around the affected follicle regains its hairy covering after due time.

# CHAPTER IV

## ALOPECIA AREATA, OR NERVOUS BALDNESS

### SECTION 1

### *Nature of the Disease*

That the nerves are of the greatest importance to the growth and development of the hair is a fact often lost sight of, nevertheless it is true that there are even diseases of the hair and scalp entirely due to the nerves. Those nerves are the ones which are engaged in the control of the nutrition of every part of the human organism and of special interest to us in connection with this subject in the development of the hair.

Alopecia areata, or as I prefer to denominate it, nervous baldness, is a rather common disease of the scalp and is most frequently observed in children and youthful subjects.

It appears rather suddenly, without any premonitory symptoms whatsoever, neither headache nor itching, nor other local manifestations, nor does the hair loss come gradually. We see no redness upon the affected scalp, no pus is visible, nor is there any tenderness upon pressure with the finger.

The patient affected with this disease seems perfectly well, yet the hair on one or more circular or circumscribed patches of the scalp falls out or leaves little stumps cut off short as if it were done with scissors.

On account of the shape of the bald area it has also been

called circular or circumscribed baldness. The disease has been known to occur in boarding schools, institutions, military barracks and police stations, in short, where numbers of boys and men are habitually assembled. A dozen boys out of a hundred in a school, a similar number out of 36 in a police station and 45 soldiers out of a company have been found to be attacked simultaneously and successively by alopecia areata. This, of course, *does* look like contagion and, indeed, some observers maintain to-day that this disease is of microbic origin.

There are others, however, who say it is caused by the nerves mentioned above, and they give good and satisfactory reasons for their convictions. One reason is that the disease is apt to return and attack the very same spot as before, which would be a truly wonderful performance for any kind of bacillus to find the same place again where he perpetrated his nefarious and voracious activity once before. Another reason is that on severing a certain nerve traversing the scalp, this disease makes its appearance without much loss of time.

Also the causes given for its appearance make it appear to be of nervous origin, such as affections of the teeth, development of the teeth, diseases of the ear, larynx, trachea and lungs, which organs are all connected by their nerve supply (the trigeminus and the pneumogastric nerves) with those of the scalp.

I have mentioned above that this disease begins with the sudden appearance of one or more bald spots in a previously abundant hair crop or beard or both together.

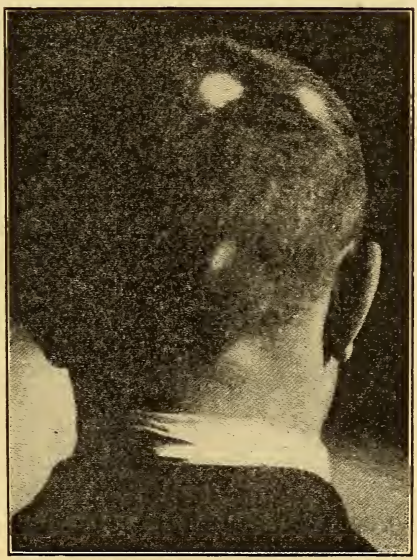

FIG. 22.

An ordinary case of Alopecia areata or nervous baldness. The bald areas are distinctly circular, which explains why this disease is so often called circular (kreisformig) baldness. The location of the bald spots in this case is characteristic, on the crown at the side and on the back of head near the beginning of the neck.

In women and children only the scalp is attacked. If several spots appear, they may confluate and form different configurations like the figure "8," or take on an oval form. They may be large or small, and gradually spread all over the hairy part of the head, denuding it entirely. The bare skin seems shrunken, withered, attenuated, and you can easily pick the loose skin up between two fingers.

In case the disease does not extend beyond the head, we call it the benignant form. Whenever it does invade the remaining hairy portions of the body, under the arms, upon the pubic region, etc., we call it the malignant form.

In the latter case the nails are similarly affected and, without changing color, seem perforated by innumerable pin-points.

The patient, as mentioned before, suffers little inconvenience except in regard to his appearance. There may be exceptional cases of people who suffer from headache, nose bleed, both originating on the side of the head where the alopecia is found. Also sleepiness is known to have been complained of, but the great majority complain of no unpleasant symptoms whatever.

It rarely attacks persons over 40 years of age. Young people, teething infants, and those about to enter puberty seem most often attacked.

As we can promise our patients almost certainly that the hair lost will surely be replaced by a new and better crop, the affection is considered one of the milder forms of diseases of the scalp.

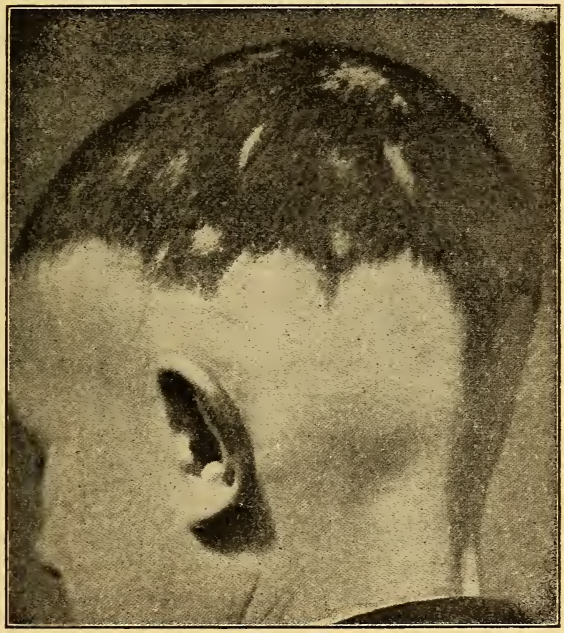

FIG. 23.

A case of Alopecia areata of the crown form, also sometimes called area Celsi. The entire base of the skull has been denuded of hair, as has the portion encircling the auricle. Here and there over the crown of the head are individual bald spots.

While this holds true in almost every case, the length of time it would take for the hair to return is quite uncertain.

It is known that cases, which were neglected in the beginning of the disorder, took years to get well; others, who resisted treatment, had wool hair or lanugo hair in place of the normal hair. Therefore it will be clear to the thinking mind that the treatment of this disease should be rational and thorough.

## Section 2

### *Treatment of Alopecia Areata*

The thousands of remedies, nostrums, tonics and hair washes which have been dumped upon the drug-market and fill the shelves of every drugshop, barbershop and lately also the apothecaries of the huge department stores, tell the tale of the variety of opinions which hair sharps have had of this disease. They are all useless, without exception, for the simple reason that they were compounded before the cause of this disease was known.

In the clinic of Sabouraud in Paris, of Josef in Berlin, of Riehl and Finger in Vienna, the one and only remedy employed is chrysarobin. A mild case with a very small patch of baldness should be treated with the following:

℞. Chrysarobin ..... 2.0
Traumaticini .....100.0

This fluid should be applied to the affected part by painting it on the scalp two or three times a week. The solution dries

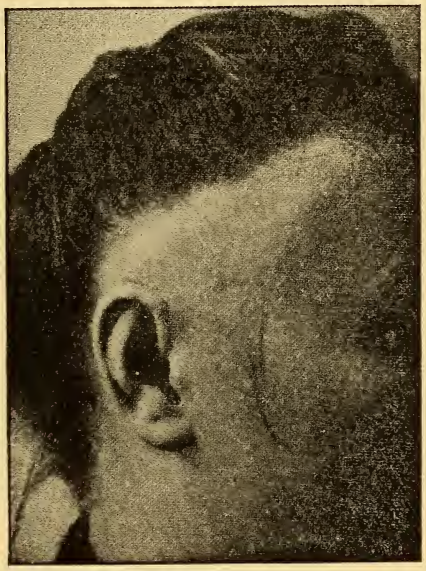

FIG. 24.

In this illustration the disease is represented as attacking a young woman's hair and scalp. Such cases are often met with. This form is very disfiguring, and what is more distressing, very obstinate in resisting treatment.

up in a few minutes after it has been painted on, becoming a yellow crust. Upon this crust another application is made.

Although no promise of a certain cure can be given, of all remedies applied this has been the most effective.

Care must be observed in the use of this drug by those who are inexperienced, as it is intensely irritant. If even the minutest particle of it came into the eye, a violent inflammation would immediately set in which would require very energetic and skilful measures for its abatement.

Therefore it is out of the question to have a patient with Alopecia Areata treated by any member of the family, however skilful.

### *Observe These Rules*

Care must also be observed not to permit a too violent irritation of the parts affected, by painting the solution upon the part too often, or even at all, in case the skin shows signs of becoming inflamed. When this occurs, a stop must be made at once and vaseline or unguentum simplex applied several times a day till all signs of irritation have vanished.

Where the solution above mentioned is not suitable for any reason, the following salve may be employed with good results:

℞. Chrysarobin ..... 5.0
Balsami Peruviani ..... 1.0
Nitini puri .....30.0

S.—Use upon parts affected. To be applied every evening.

FIG. 25.

This case, which, like the preceding ones, have come under the observation of Professor Brocq of the St. Louis Hospital, Paris, is an example of the malignant type of Alopecia areata—beard, eyebrows, eyelashes, the hair growing in the axilla on the os pubis, on the breast, on the upper and lower limbs, all disappear. Yes, there have been cases where even the fine wool hair (lanugo) has entirely disappeared.

The patient should observe, when using this salve, that after applying it in the evening before retiring he should wear a cap upon his head and wash the affected parts twice a week with castile soap and water.

Where Chrysarobin, for some objection or other, is not suitable at all (it stains the skin a vivid yellow), a good substitute for it is found in the following paste:

℞. Olei Crotonis .....2.0
Cerae albae.
Butyri Cacao .....aa1.0
m. f. pasta.

S.—Use on parts affected.

On account of the strong irritant this paste contains, it is advisable to use only a minute portion of it the first evening: for instance, a bit the size of the head of a pin on a bald area the size of a quarter of a dollar.

Put vaseline or unguentum simplex on the inflamed skin, as mentioned above, until the irritation is subdued.

Gradually the skin is less and less affected by the remedy and larger amounts can be used with good results, and the hair will come back in time.

# CHAPTER V

## SUPERFLUOUS HAIR AND ITS REMOVAL
## KNOTTED HAIR, SPLIT HAIR

### SECTION 1

### *Nature and Location of Superfluous Hair*

Hypertrichosis (from the Greek word *hyper,* overmuch, *trichosis,* hairness), an overgrowth of hair, is seldom found to be general (on body, face and limbs, but often is localized on the faces of women. It may be acquired or hereditary.

Applying blisters on any part of the human skin or keeping hot fomentations on one particular region of the body for any length of time, will bring forth a copious crop of hair, to the great surprise of the patient; but, nevertheless, it is a fact.

The species of hirsuties or hairiness which interests us most is that one which has been the bane and curse of many a young girl or woman for ages.

When they develop an abundant hairy coat upon upper arms, forearms, thighs, legs or abdomen, it does not worry them so much, and rarely do they consult the physician about it.

But nearly all cases which come to us for relief are those where an otherwise pretty face is disfigured by an abundant growth of hair on cheek, upper lip and chin.

They have undergone acute mental torture through the innocent or careless remarks of friends and relatives, and come to us for help.

Sometimes only a perfectly legitimate and proper little down covers their lip, harmonizing well with the general features, but no amount of argument will convince them that it is quite unobjectionable. They insist upon having this downy growth removed.

With many of those thus afflicted it becomes a regular mania; their glass is consulted at every hour of the day to see whether this innocent down has grown more noticeable; they carry pocket mirrors, when going from home, in order to be able to keep up surveillance and inspection of their face at every favorable moment.

Many of these ladies have acquired superfluous hair in the following manner: First, taking fright when noticing the fine down appearing upon their upper lip, they pull out each one of the tiny hairs or burn off by means of an alcohol flame whatever is too minute to be held firmly between the thumb and forefinger.

Naturally the down, stimulated by the force exerted upon the hair follicle, grows more vigorous and bigger at each attempt to eradicate it.

Often persons thus afflicted have recourse to depilatory powders which they have seen advertised as a sure cure, but which are nothing of the sort.

Soon the ever-returning down develops into a normal hair to all intents and purposes, and now really becomes a disfigure-

FIG. 26.

FIG. 27.

FIG. 30.

FIG. 28.

FIG. 29.

FIG. 26.—Young Lady with Hair on upper lip and chin.
FIG. 27.—Young Lady with Hair on cheeks.
FIG. 28.—Young Lady with well-developed Side Whiskers.
FIG. 29.—Same after treatment.
FIG. 30.—A case of excessive Hypertrichosis.

ment and objectionable on that account; for a real hair of the bristle variety was not intended by Nature to adorn a woman's upper lip.

Thus we have seen how an innocent, unobjectionable down is turned into a disfiguring growth of hair by the irrational methods of a frightened young woman.

There are however many cases where nothing is done to turn this down into normal hair, and yet normal hair develops in great plenty. Here we have heredity pure and simple.

Without going into particulars as to the different groups and varieties of hirsuties or hairiness, which depend merely upon their location, whether on cheek or chin or upper lip, my intention is to describe the different forms of treatment devised and recommended for the cure of this affliction at the present time.

## Section 2

### *The Removal of Superfluous Hair*

Among the large number of suggestions made and accepted for the removal of superfluous hair on the female face, burning with alcohol flames was one of the earliest.

Remedies, once much in vogue for removing obnoxious hair from the face, were bees'wax, pitch, sealing wax and other agglutinous substances attached to a short stick of wood, match or toothpick; they were melted at a flame, quickly applied to the hair, allowed to cool and removed with lightning rapidity and the hair with it.

Squeezers and pincers are still in general use, and do well where single hairs standing alone are to be taken away.

Scissors are employed to cut the hair short enough to allow a razor to be used. This requires skill and courage, roughens the skin and must be done daily during life, for on stopping, a virile growth of beard will be in evidence.

Another method for removing hair from the face is the use of depilatory (hair removing) powders which, when mixed with water, make a paste.

This paste, having been transferred upon the upper lip or whatever other part overgrown with undesirable hair and left on for 5 or 10 minutes, will on removal leave the skin beautifully bare, smooth and devoid of any vestige of hair, though the reddened surface will show plainly that it has happened at the expense of an irritated and angry looking skin.

Such depilatory powders which are advertised in all the daily papers, contain Barium Sulphate, Arsenic Trisulphite, Calcium and Salicylic Acid, each and every one a dangerous drug which has to be used with great caution.

Some of the most celebrated mixtures for the purpose of removing hair from the face are these:

Laforest's depilatory powder:

℞. Orpiment ..... 30.0
Letharge ..... 30.0
Mercure ..... 60.0
Amidon poudré ..... 30.0

Get this in a first-class French drugstore.

M.—Fiat pulvis. S.—Externally.

Turkish Depilatory:

℞. Trisulphite of Arsenic. 6.0
Chaux vive. ..... 16.0
Farine de foment .....2-5.0
} Get this in a good French drugstore.

M. Fiat pulvis. S.—Externally.

Boiling water must be added to these two mixtures in sufficient quantity to make a paste. Apply this paste with a wooden spatule on parts affected, leave on 5 or 10 minutes, until burning sets in. Remove with a dull knife, wash parts with hot water, cover with starch powder.

Andersen's Mixture:

℞. Barii Sulfidi ..... 6.0
Zinci oxydati .....24.0
Carmine ..... 0.6

M.—Externally.

Other mixtures much used in Germany are:

℞. Barii Sulfidi recenter parati.
Zinci oxydati partes aequales.

M.S.—Externally.

or,

℞. Strontii Sulfurici ..... 8.0
Zinci oxydati
Amyli ana. .....12.0

M.S.—Leave on after preparing paste with warm water for 5, 10, or 15 minutes, remove with oil and put cold cream on the skin treated.

All these powders are irritants and injurious to the skin which shows signs of inflammation after their use, if continued for any length of time. Their *irritant* qualities often increase and quicken the development of the hair, frequently removed in this way, making it necessary for the unhappy sufferer to renew the operation at even shorter intervals and make greater efforts every time. To-day the surest remedy, a remedy approved by all dermatologists for the removal of superfluous hair, is electrolysis by the use of the galvanic current.

## Section 3

### *Electrolysis and Kromayer's Method*

The removal and destruction of hair by the galvanic current was first done by Dr. Michel, an ophthalmologist of St. Louis, who used this method to destroy deviated hairs in the eyelids of his patients. Dr. Hardaway, a physician, followed this example and used the galvanic current for the first time to destroy hair bulbs and thus to prevent the growth of superfluous hair on the face of his lady patients. This is now the method generally adopted by the dermatologists, and no better way has yet been found.

The usual proceeding consists in inserting a fine needle into the hair follicle and allowing a gentle current from the battery to act upon the hair bulb for from one to one and a half minutes, after which the hair can be easily removed with the pincers.

It is possible to remove about 50 hairs in one hour by this method.

At the Paris clinics more than that number are sometimes removed, but it is not best to take out more at a single sitting, and the best advice is to remove no more than 50. Of these 50 hairs removed 30-50 percent are expected to return and must be removed again.

The patient will be surprised when told that this work has to be done over again, but a few necessary explanations will make it appear reasonable, and even natural, that this should be so.

When electrolysis is used for depilation there is scarcely any pain felt on introducing the needle into the follicle, nor when the needle comes into contact with the bulb.

The current being now turned on very gently and slowly to avoid giving the patient a shock, a slight burning sensation is felt, which continues as long as the current is left on.

If the needle has touched the papilla at the bottom of the follicle, the current will surely destroy it and thus prevent the formation of another hair. The destruction of the papilla however will not prevent the new issue of hair from the follicle in every case, for the following reasons. The papilla may be destroyed or rendered inactive, but a second (and sometimes a third) hair may have been lying in wait, attached to the walls of the follicle, ready to push forward as soon as the old hair was removed. Again the current of electricity let into the hair follicle may stir the hair generating apparatus around and about the papilla to renewed activity and, last but not least, a downy hair may be turned into a bristle hair by the same agency.

These are the possibilities even when the papilla has been reached by the needle, and the electrolytic process has been properly carried out. But this is not always to be expected from even the most skilful and experienced operator; for, to come in contact with the hair papilla, we must follow the hair shaft as it emerges from the follicle and feel our way along it down to the papilla on which it grows. But, alas, the hairshaft is not always a straight and upright hairshaft; it has crooked, devious and inscrutable ways about it like so many other things. Often it makes a rapid turn immediately after it has passed the upper or epidermal layer of the skin, and it is impossible to follow this turn with the needle. Without the guidance of the hairshaft, the needle goes on in the same direction and may or may not strike the papilla. In the latter case the hair is only removed with difficulty and a little pain, while otherwise the hair follows the slightest pull and almost drops from the follicle.

Under these circumstances the patient is obliged to trust entirely to the skill and honest intention of the physician who is willing to undertake this arduous and difficult work.

Although the pain which the patient feels is insignificant when the needle and the current are used by an experienced operator, yet many patients feel inclined to give up the treatment, unable to bear it, but these are probably hyper-sensitive persons, and usually, when they see the good results following and become used to the slight pain, they are anxious to have the treatment continued and are willing to bear what little pain there is in return for their improved appearance.

While in Paris and Vienna, at Professors Sabouraud's and Brocq's clinics, the single needle is still being used, I learned and adopted the newer method of Prof. Kromayer in Berlin, who combines five gilt and insulated needles attached to wires, each needle being inserted in a hair follicle; thus removing five instead of one hair at a time. The needles used are so fine that they cause hardly any discomfort and the time saved in the removal of the hair is considerable. Prof. Kromayer's method is for these reasons so far superior to the old one that I prefer to employ it.

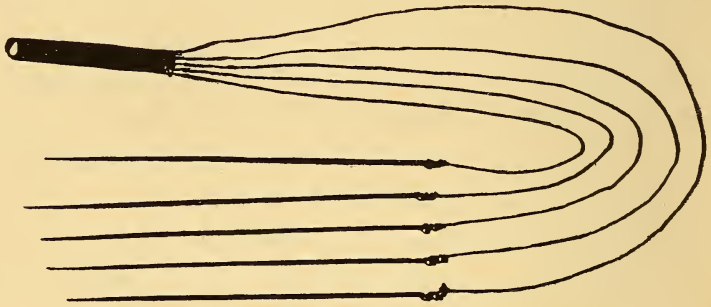

Fig. 31.—Needles for Epilation.

This method is called multiple epilation, because four or five hairs can be removed at the same time. A further reason for favoring the Kromayer method is the fact that instead of 50%, only 10 to 20% of the removed hairs return to be removed a second time.

## Section 4

### *Trichorrhexis Nodosa (Knotted Hair)*

Trichorrhexis nodosa, a Greek and Latin combination of words (*Trichos,* hair; *rhexis,* burst; *nodosa,* knotty), means in English: a knotty burst hair. It is commonly called knotty hair, because the bursted or rent portion of the hair has the appearance of a knot. This is one of the several forms of injury which the hair receives through mechanical force, such as improper use of bad brushes, broken combs, etc. While normal hair looks smooth from one end of the hairshaft to its point, we

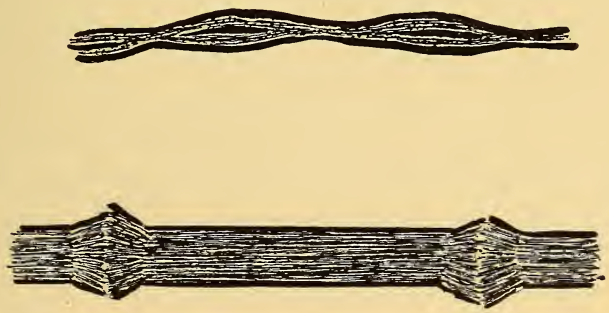

Fig 32.—Knotty Hair

see in these cases little knots at short distances from each other, which sometimes resemble nits, but on close inspection show a condition of the hair, as if it were split into innumerable fibres or threads, as if for instance two painter's brushes were stuck together with the bristle ends on top of each other.

The microscope shows that the external layer of the hair, the cuticle, is burst open and the inner layers show through the broken ends of the cuticle in the manner above described.

The cause of this condition has been given as, first, insufficient nourishment; secondly, mechanical injuries, and, thirdly, microbes.

The real cause seems not to have been found. However, the majority of modern dermatologists ascribe it to mechanical injuries as mentioned above.

Prof. Joseph (Berlin) likens it to a shaving brush which when insufficiently dried after using and placed at the open air, will show the same condition as the human hair does in trichorrhexis nodosa. He says it is not to be wondered if microbes attack the injured parts and settle there as they are in the habit of doing wherever they find an easy entrance into the tissues by scratches, tears, cuts or wounds. Another dermatologist practiced on his mustache, washing it day after day with soap and water and after a few weeks he was gratified (?) by seeing a beautiful case of trichorrhexis nodosa develop on his own mustache.

## Section 5

### *Trichoptilosis, Splitting Hair*

This condition receives mention simply to distinguish it from the preceding hair trouble. The word means featherhair, *thrix* meaning hair and *ptilon feather;* both words are from the Greek.

A feathered hair, or as it is generally called, a split hair, is caused by a separation of the hairshaft in two or three longitudinal parts. Microbes and bacilli have been looked for to account for this splitting of hair, and hairsplitting arguments have been carried on for many years as to the cause of this condition, until at last this degeneration of hair is being accounted for by natural reasons.

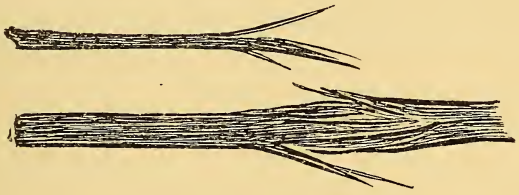

Fig. 33.—Split Hair.

Trichoptilosis or split hair is due to abnormal dryness of the hair, which makes it split at the end. Too frequent washing of the hair with improper or badly chosen soap, using bad brushes with broken bristles, combs with split teeth, the curling iron too frequently and carelessly, hot air apparatus for quickly drying hair after washing it, or some other mechanical injury lead to this condition as well as to the former, trichorrhexis nodosa.

The remedy is the same for both conditions. Washing with soap is prohibited, as this process would abstract even the last vestige of natural oil from the hair; good brushes and combs are to be used. We order a good hairoil, a good scalp lotion

containing some of the vegetable oils, as follows, for use every morning:

℞. Olei amygdalarum ..... 27.0
Olei bergamotti ..... 3.0

or this Brillantine:

℞. Olei ricini ..... 50.0
Spiritus vini ..... 10.0
Olei rosarum ..... gtt. i—ii

D.S.—To be rubbed into the hair and scalp every morning.

# CHAPTER VI

## PARASITICAL AND FUNGOID DISEASES OF THE HAIR

### SECTION 1

### *Origin of the Names*

Parasitic is a derivative from parasite (from *para,* upon or by, and *sitos,* food), which means an animal feeding upon another animal, or a plant living upon another plant, or an animal deriving its nutriment from either.

This is exactly the case in the three varieties of hair diseases I am going to describe in this chapter.

Two of them are due to a vegetable and the third to an animal parasite, viz.: Trichophyton tonsurans (or Herpes tonsurans or Trichophytosis) the first one; Favus, the second, and Pediculosis capitis or head lice, the third.

### SECTION 2

### *Trichophyton Tonsurans (Ringworm)*

The name is Greek and Latin side by side, Trichophyton being derived from *thrix,* the hair, and *phyton,* plant, hairshaft; *tonsurans* is a Latin word meaning shearing, shaving. Hence the combined name means a shearing hair plant, or rather a hair-shearing plant.

The plain English for this variety is ringworm, most inap-

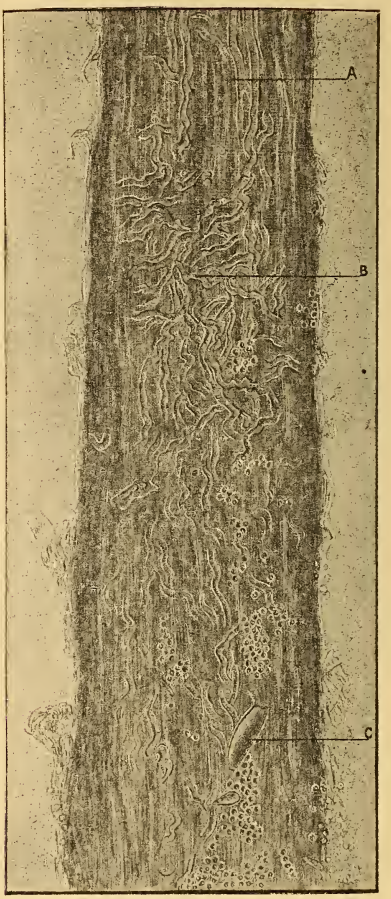


FIG. 34.

Hair of a child afflicted with Trychophyton (Ringworm).

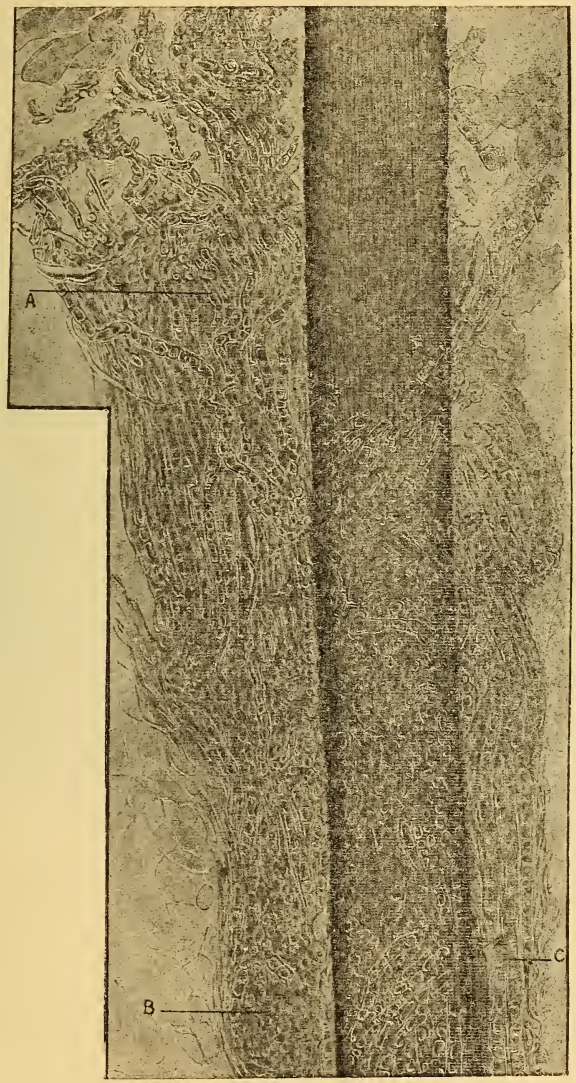


FIG. 35.

*A*—Hair Shaft. *B*—Mass of Trichophyton surrounding shaft. *C*—Fungus penetrating Hair.

propriate, for it is not always a ring and never could be a worm, since it is perfectly well known and easily recognized under the microscope as being a plant.

It is a contagious disease of the scalp, caused by the invasion of the fungus called Trichophyton tonsurans, which name adequately describes the quality and occupation of this parasite.

This it certainly is; for we recognize its work in every place where it has taken up its domicile.

Prof. Sabouraud, the great French investigator of diseases of the hair at the St. Louis Hospital in Paris, makes a distinction between a larger and a smaller fungus, or spore as he calls it, thus getting the designation *makrosporie,* meaning the presence of big spores, and *mikrosporie,* meaning the little spores, which has been accepted by most of the modern school of dermatologists.

It would lead us, however, too far away from our subject to enter into a discussion of the several varieties and sub-divisions existing and known to the profession. As an instance of the diversity of opinions on this subject, let me only mention the fact that this disease has not less than thirty different names given to it by those who have made it a subject of their research.

For the purpose of this booklet it is sufficient to say that this disease called by the general name, Trichophyton tonsurans (ringworm), is caused by a fungus invading the hair, shearing and destroying it.

It is recognized by patches, sometimes circular, sometimes oval in shape; by scaly grayish white marks looking as if they were covered with dust and ashes.

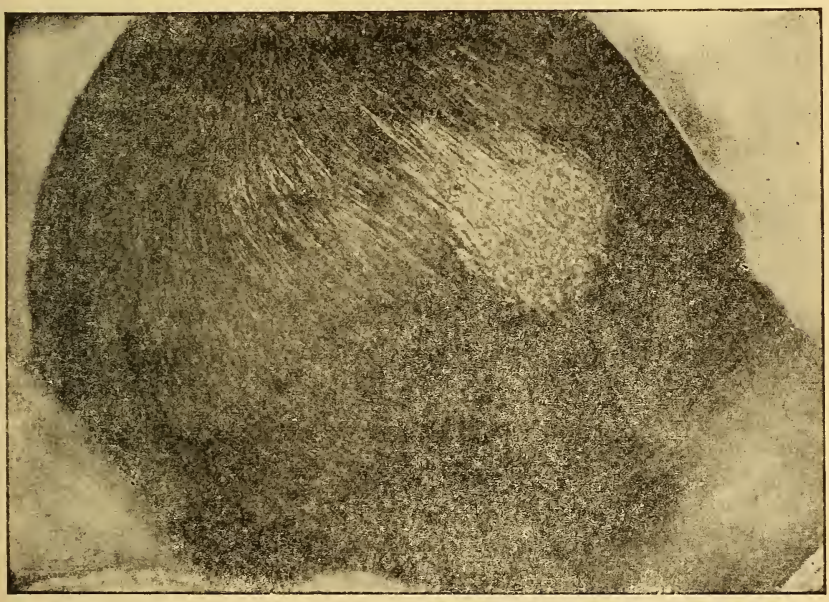

Fig. 36.

An ordinary case of Trichophyton tonsurans on a Boy's Scalp (Sabouraud).

These marks are covered with stumps of hair, remnants of hair which show signs of having been broken off, this latter symptom being the most distinguishing mark of this disease.

The damage to the growing hair is caused by the fungus invading the hairshaft, spreading through, up and down, laterally and longitudinally, thus weakening the hair and causing it to break off at the point of least resistance. At the same time the hair loses its color, looking whitish or grayish and dead.

This sign however is sometimes absent and whenever it is, we have to deal with the Makrosporon of Sabouraud, which causes little if any discoloration of the hair and leaves the skin undisturbed.

A very clear picture of the destructive work this fungus is doing when it has penetrated the outer cover of a hair, is shown by the accompanying pictures selected with the permission of Professor Sabouraud from his great work on fungoid diseases of the hair.

Although curable, this disease tries the endurance of physician and patient to the utmost.

It sometimes takes years to eradicate the parasite, and needs constant attention during certain periods of its development.

## Section 3

### *Treatment of Trichophyton*

The first step in treating these cases effectively is to have the hair clipped short, in order to facilitate the local treatment of the disease.

FIG. 37.—Invasion of a Little Girl's face by the Ringworm.

After that a thorough cleansing of the scalp is in order. This is best done by Hebras spiritus saponatus calinus, or the tincture of green soap and external application of some such vigorous remedies as are given below:

℞. Acidi Carbolici.

Olei Petrolati aa..... 65.0

Tincturae Iodi.

Olei Ricini aa.....110.0

Olei Rusci qu.s. ad.....500.0

D.S.—Externally.

This solution should be applied by means of a painter's brush upon the diseased portion of the scalp daily, for six consecutive days. On the sixth day another washing of the scalp should be given, or it should be brushed thoroughly, applying olive oil at the same time.

On the seventh day, the former proceeding should be repeated for another five or six days and so on for three or four weeks.

This treatment is to be followed by friction of the scalp with a sulphur ointment of 5-10% strength, according to circumstances.

℞. Sulphuris sublimati. ..... 10.0

Vasilini flavi .....100.0

and in conclusion we employ for two weeks the following solution day by day:

FIG. 38.—A French Poodle attacked by Ringworm.

℞. Resorcini.
Acidi Salicylici aa..... 16.0
Alcoholis .....120.0
Olei Ricini ad.....500.0
D.S.—Externally. Rub in scalp.

This mixture should not be used by those whose hair is light in color (blonde or gray).

In slight cases, when only one or two small patches of the trichophyton are found upon the scalp, apply either:

Tincturae jodi qu. s.,
or, Ichthyoli puri qu. s.,
or, Chrysarobini Traumaticini 2-5%,
or, Pasta Resorcini 10% (not to be used by blondes or gray-haired people).
or, Unguenti Wilkinsonii 10-20%,

a small quantity, say one or two ounces of the fluids, 3 drams of the ointment, would prove sufficient to carry the case to a quick and good recovery.

Another much recommended remedy and often employed is the red salve (Scharlachsalbe) of the late Prof. Lasar of Berlin, in whose clinic hundreds of such cases sought and found prompt relief from this disease by the use of

℞. Hydrargyri sulfuris rubri..... 1.0
Olei Bergamotti .....gtt. xxv
Sulfuris sublimati ..... 24.0
Vasilini Americani ad.....100.0

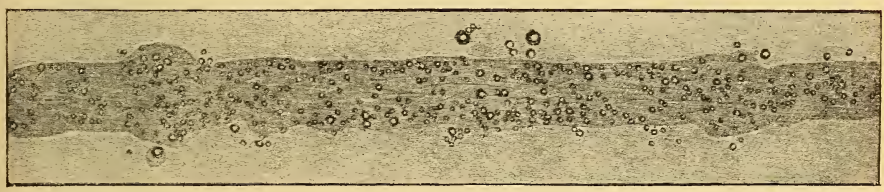

Fig. 39.—Typical appearance of Hair attacked by Favus.

## Section 4

### *Favus*

This disease is quite common in Russia and other Eastern countries, and many cases of favus were imported into this country among the Polish and Russian Jews before the officer of the port stopped the influx.

A fungus discovered by Schoenlein and named after him Achorion Schoenleinii, is known now to be the cause of this infectious disease.

As it is, we have this disease here now and see cases of favus at all the dispensaries of this city. For all I know, the ban on the admission of those people who are afflicted with it may have been taken off, since we know to-day so much better how to deal with it and cure it absolutely.

The disease is readily recognized by the physician when he sees the little scutula, shields, cups, crusts or whatever you may wish to call the yellow, hollowed out, shell-like scabs often perforated by a hair, which cover the diseased portion of the scalp in greater or smaller numbers.

The hair within these crusts loses its color, lustre and gloss, takes on a dusty coat, getting dry and friable, and breaks off.

Although slow in progress it goes on steadily from bad to worse till the whole scalp, shoulders, back and buttocks may be involved, unless energetic measures are taken to stop the further inroads and progress of the fungus.

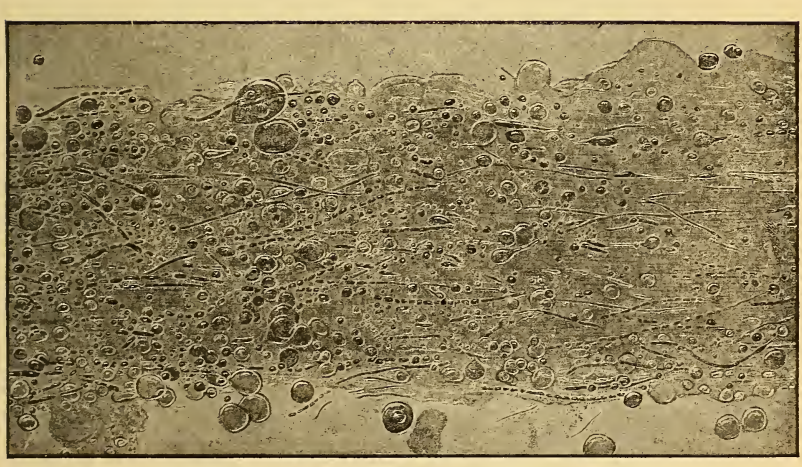

Fig. 40.—Section of Hair of Favus case.

No other disease of the scalp can well be mistaken for *favus,* for the scabs and crusts of *folliculitis,* to which it has some resemblance, are straight and flat, not turned up like little saucers or cups as in favus.

The prospect of a new crop of hair after recovery is not good, for every little crust means a cicatrix and destruction of tissue necessary for the development and growth of new hair. The fungus after penetrating the upper or epidermal layer of the skin burrows below the surface and destroys follicle and bulb of hair alike with sudoriferous and sebaceous glands, and on recovery we find a smooth, hairless, shiny mark in the place where the scab was found before.

## Section 5

### *The Treatment of Favus*

There can be no successful treatment of favus without the removal of every hair which has been affected by the fungus.

To do this we first wash the scalp thoroughly with soap and water and with a suitable pair of pincers remove every hair within the infected area. If the part is large enough a bunch of hair may be pulled out by taking hold of it between thumb and first finger, guarding against infection by the use of rubber tips. Formerly much of this work was done by employing pitch, wax and other agglutinous substances on sticks of wood. When all the infected areas are cleared of hair and cleansed again with soap and water we employ the following mixture as a fungicide:

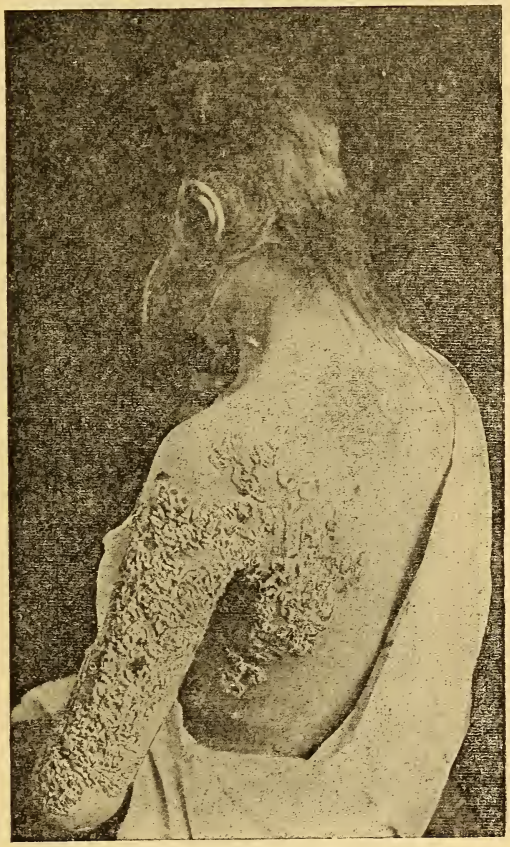

FIG. 41.—Favus spreading over Shoulders and Arms.

℞. Hydrargyri Bichloridi ..... 0.5
Tincturae Iodi .....ad 50.0
D.S.—Externally. Rub in parts affected.

Lately pyrogallic acid ointment 5-10% or chrysarobin ointment 10-20% have also been used with good effect; only great care must be taken, when using the last two remedies, not to get an atom of them into the eyes, which would be badly affected by the irritative quality of these acids. The proceedings above described should be continued for about one week, when a rest must be had for 3 days. After renewed washing of the scalp the same modus operandi must be repeated, and so on until no more signs of a return of the disease can be discovered.

This manner of treating favus will do very well and prove satisfactory in most cases, particularly where none of the modern appliances can be secured.

The most modern treatment of favus, however, is the use of the Röntgen or X rays; no better means of abating this disease quickly and for all time has been found. One single application of the Röntgen rays of the proper strength and duration will remove the hair within two weeks and with the certain assurance that they will grow again. What formerly in many instances took a year and longer to accomplish, *i. e.,* the clearing the scalp of every infected hair, is done by the Röntgen rays in one single sitting.

Of course it must be done thoroughly, otherwise a relapse will take place, the favus parasite will renew its activity and the work must be done over again.

Fig. 42.
Entire surface of Boy's Body attacked by Favus.

To destroy the fungus it is necessary to remove the infected hair and the follicle in which the hair grew, for the fungus is not killed or destroyed by the Röntgen rays, and we only rid ourselves of it by destroying that part of the skin and its appendages in which it has its domicile.

Neither can the hair bulb withstand a second dose of Röntgen rays, and if the first application has been unsuccessful or ineffectual, the danger of having the hair destroyed forever is very great when a second application is given.

Therefore the older treatment is still good in many cases and to be preferred when a small area of the head is infected.

## Section 6

### *Pediculosis Capitis* (*Head Lice*)

The name of this parasitic disease of the hair has been derived from the Latin word *pediculi,* which means lice; another classical name often seen is *phtheiriasis,* taken from the Greek; the plain English being lousiness.

Lice are parasites invading and living on human beings and animals, and are different in kind, as they inhabit different parts of the body. As they do not come within the compass of this section we shall simply describe that parasite's doings and nature which causes disturbances on the human scalp.

When lice have taken up their domicile on the head, the first symptom the person may have is itching, caused by the meanderings of the new inhabitant in search of food. To obtain the latter, attacks upon the skin are next in order and bites are

the second symptoms the sufferer notices. There are people who may have an entire regiment of this vermin upon their head and never feel the slightest disturbance, while another may be driven to distraction by the movements and assaults of a single parasite upon his scalp. Scratching long and persistently seems to be their only relief. In the case of children their nights are sadly disturbed by the invasion of lice and they scratch their scalps until bleeding gives them the desired relief. Small children below the age of 2 or 3 years are rarely infested by them, since their supply of hair is insufficient to harbor this parasite; for the female laying the eggs needs the strong hairshaft to which they are to be fastened by the peculiar cement that resists all ordinary agencies to loosen them.

Older children, with plenty of hair, are the ones who offer the choicest habitat for this enemy of the human hair and these children lacerate and maltreat their scalps to such an extent by scratching that pustules form where the scratches were, and eczema of severe type attacks their scalp as an after effect of their fight against the vermin.

The poor, unclean and unhealthy children, the scrofulous, tuberculous offspring of our tenement population are the ones who most frequently suffer from this complaint, but the children of the well-to-do going to the same school, sitting side by side with the sufferers, very often carry the vermin home with them and communicate the same to their sisters and brothers, until entire families have to undergo treatment to escape this common infection.

To recognize this disorder early is of the greatest importance, for quick discovery means quick recovery in this particular instance.

To make sure of the presence of this invader of the scalp, it is necessary to examine the hair most carefully whenever a youngster comes home from school and complains of itching.

The female lays eggs in vast numbers and propagation of the race is kept up at a very lively rate. The eggs, stuck to the hairshaft, as I mentioned above, are recognized as tiny grayish-whitish bodies resembling a little the branny scales from over-dry scalps. These "nits" (such is their name) are not to be removed by brushing, even if the brush be ever so hard and used with a will; and this proves their identity; for scales, dust and detritus would easily be removed by a hard brush.

## Section 7

### *Treatment of Pediculosis*

Fortunately, this country is richly supplied with the best remedy for destroying this disgusting parasite, for there is up to this hour nothing more effective than "Kerosene."

At the Vienna General Hospital, where hundreds come daily for relief from this condition, nothing else is used. So it is at the Hospital St. Louis in Paris, so it is at the Kliniks in Berlin.

The modus operandi is simple. Saturate the scalp of the sufferer for a couple of days in succession with petroleum, and then wash this mess away with hot water and soap. This destroys the living parasite.

We deal with the ova or nits this way. As the cement which mother louse uses is extremely tough and tenacious, strong vinegar or the ordinary acetic acid of the drug stores should be employed to soak the hair infected with the nits, being careful not to touch the scalp and its many sores and scratches.

A fine comb is now to be used, being dipped into vinegar each time before drawing it through the hair.

Another method among the better classes is to use a combination of bichloride of mercury with acetic acid, which will destroy vermin and ova at the same time when used several times per day for several days. This prescription is as follows:

℞. Hydrargyri Bichloridi ..... 2.0
Aceti Communis .....ad. 300.0

Where much soreness of the scalp is found to be present, it is well to soothe it by the liberal use of olive oil, which will soon abate the soreness, as long as no eczema exists.

# CHAPTER VII

## HYGIENE OF THE HAIR

### SECTION 1

### *Cleanliness of Scalp*

The scalp must be kept clean, particularly since we know now, through modern investigations and laboratory experiments, that many diseases of it are due to microbic invasion. Therefore, it must be understood that a certain amount of time and care should be given to cleansing the scalp.

With many people, particularly with those who work hard in mines or foundries, it has been found that dirt accumulates rapidly on their scalp.

The profuse perspiration which is often so excessive in that region of the body, the secretion of the sebaceous glands and the detritus of the worn out skin mingle with the dust and grime of the workshop or street, and this is reason enough why some people should wash their scalp daily when engaged in such work.

While this may be necessary for men and women employed in particular kinds of work, it is no indication for others.

As a general rule, washing the scalp is not needed by adults, except every three or four weeks, according to circumstances. If daily exposed to the dust and dirt of the street in cities a weekly hairwashing may be necessary, but if not so exposed, longer intervals would be better.

For it must not be forgotten that daily washing, douching and rubbing the scalp, unless made necessary by the afore mentioned conditions, would be very detrimental to the growth of the hair. In fact, many persons lose their hair through this foolish practice alone, for they neglect not only to dry their hair and scalp thoroughly, but forget likewise to return to their scalp the needful fat which the soap and water have withdrawn from it, leaving the hair dry, brittle and liable to break off at the least mechanical injury.

Both children and adults should have their hair washed with Hebras Tincture of Alkaline Soap, green soap or Castile soap. This variety of soap contains little or no acid and causes the least injury to the hair.

The best method of washing the hair is given in Section 2. The question of how often the scalp should be washed is frequently asked. It is different in every individual case, depending upon whether much oil or pomade is used or not.

Many people have so little activity of the sweat glands, so little scaling, use oil or pomade so rarely, that the daily use of brush and comb proves amply sufficient to keep their scalp in thorough order. With these people washing the scalp seems unnecessary.

When hair oil or pomade has been used regularly the condition is quite different.

For such cases washing or shampooing the hair is a necessity, all the more when it is combined with scaling and itching of the scalp.

The most effective and generally approved method on account of its small expense, great simplicity and its rapid operation is indicated in the following section.

## Section 2

### *Washing the Hair*

A tablespoonful of the tincture of alkaline soap (Hebras) is poured into the hollow of the hand and rubbed thoroughly into the hair. This is immediately followed by a tablespoonful or two of quite warm water, which with the soap creates a foam or lather. If this quantity should not be sufficient to cover the scalp entirely, another half tablespoonful of the soap and water should be used, forming an abundance of foamy lather, which, after being rubbed into every part of the scalp, is allowed from 5 to 10 minutes to penetrate every hair of the head.

It is prudent to cover the foamy head with a towel during the interval. In the meantime hot water as well as six or eight fluffy, old, spongelike towels, heated to a comfortable temperature, must be prepared ready for use. When the 10 minutes during which the soap has had time to penetrate every part of the hair and scalp and soften the topmost layer of the skin have expired, plenty of hot water is poured over the foamy head and by vigorous rubbing made to wash the lather away. One quart after another should be used, particularly with ladies, to cleanse the scalp thoroughly, for soapy hair will never dry nor feel comfortable on the head.

After all the water has been used and no soap is left behind, the hot towels should be used one by one until the hair is perfectly dry. The heat of the towels will help to evaporate the moisture quickly; being soft and spongy, they absorb the water more rapidly, so that after 5 minutes or at the most 10 minutes gentle rubbing, the longest and densest crop of hair will be dry and ready to be dressed once more. To make quite certain that no vestige of moisture is left behind, a tablespoonful of Cologne Water could be used either by hand or by spray; when this has been rubbed into the parts of the head still remaining damp, it will be found that they will dry immediately.

A little oil, pure, unperfumed olive oil, should now be applied to the hair which, after such a thorough shampooing, is apt to become very dry.

Those of my patients who have tried this method never use any other, for it is thoroughly satisfactory and can be accomplished in 15 or 20 minutes.

## Section 3

### *Combs and Brushes*

While it is wise to use only the softer kind of brushes for infants, because they will not produce irritation or tenderness of the scalp, for adults, male and female, a hard brush is better, though in some cases a soft one may be preferable.

When choosing a brush, take one which has long bristles in the centre and shorter ones on the circumference. The bristles

should stand in bunches, not too close together; and in each bunch the middle ones should be longer than those surrounding them.

When the bristles are thus separated and arranged, it will be easier to penetrate the hair with them and reach down to the scalp proper, which needs brushing even more than the hair, since most of the impurities are lying upon it.

The comb should be large, with teeth wide apart; a fine comb should never be used on the normal scalp; they are only necessary for the removal of vermin and nits.

After the comb has been used to separate the hair into strands the brush must be forcibly drawn through, in such a way that there ought to be a certain feeling of pleasant warmth upon the scalp without the least sensation of soreness.

Thus the hair will be cleaned as it should be and the scales removed from the scalp.

For finishing the dressing of the hair, a softer brush might be used for the purpose of smoothing it and giving it more gloss. A soft brush is also to be recommended whenever there is tenderness or soreness of the scalp. The comb, coarse and with teeth set wide apart and dull pointed, will go easily through the most luxuriant crop of hair without pulling and tearing the hairs from their bulbs.

A fine comb is used by many people who believe that the finer the comb is, the finer it cleans. This is a mistake. The cleaning is far better accomplished by the brush, which does not injure

the scalp; while the fine comb, so often employed to remove scales and dandruff, irritates the scalp and instead of improving only increases the trouble.

Combs and brushes should be kept scrupulously clean and washed at least once a week in warm water to which some ammonia, one teaspoonful to a quart of water, has been added.

## Section 4

### *Style of Wearing the Hair*

The style of wearing the hair, whether it should be allowed to grow long or be cut short, has given rise to much discussion. There are those who advocate the preservation of hair as an ornament as well as a natural protection to the head, and point to the female sex whose hair, being allowed to grow to any length, does not fall out nearly as much as the hair of men wearing it short.

The opposition maintains that to cut the hair short stimulates it to denser and more vigorous growth, particularly where it was thin and unhealthy in appearance. Furthermore, they say that the hair worn short can be more easily kept clean, etc.

It is certainly preferable to allow small children until the age when they begin to attend school, to wear their hair long; but as soon as the school time has arrived, it would be better to cut it and keep it short in order to permit thorough ablutions, thus preventing the invasion of vermin.

As far as men are concerned, it depends a great deal upon their occupation whether short or long hair is preferable. We

occasionally see artists, especially musicians, painters and the like, wearing their hair long, and there is no reason why they should not do so, if they prefer it, as long as their scalp is normal and needs no treatment.

Those employed in industrial pursuits and younger men in general, all those who are fond of sport, have for a long time been accustomed to keep their hair trimmed short and it is to be recommended for reasons of cleanliness. The notion that keeping the hair short makes it more vigorous and produces a fuller supply of it has long been proven to be false, though the contrary is often maintained. Cutting the hair too often exhausts the generating bulb.

Airing the hair by keeping it uncovered is supposed to add vigor to it and make it healthy; alas and alack, the causes of good and bad hair are not dependent upon the admission of air to the scalp; it is more often the stomach, the liver, the digestion and normal or abnormal assimilation of food, the nerve centres, the whole organism in fact, which supply a healthy growth of hair or destroy it, according to their normal or abnormal condition.

As far as woman's hair is concerned, one thing must be mentioned before anything else. No woman with thin, poor hair, and inclination to congestion and headache, should wear false hair upon her head.

These conditions would only be aggravated by wearing pads and rats, braids and other arrangements, no matter whether they are bought or made up from one's own hair. The pulling

and straining that they occasion, the dust they collect, increase not only the congestion and headaches, but deteriorate the already scanty supply of hair.

Where the above objections do not exist, there is no valid reason to disapprove of a moderate amount of false hair, to adapt it to the prevailing style of hats worn.

Physicians have no right to oppose women who desire to improve their appearance, and if their esthetic views do not agree with ours on all occasions, we should not interfere as long as the laws of health are not broken.

Heavy braids placed on top of the head, heavy combs and pins, or any other ornaments, whether they serve as fasteners of the braids or a decoration, should not be used too liberally. When all these things, including hairpins, are removed from a lady's head, they often amount to many ounces in weight, are apt to tear the hair and weigh heavily upon the scalp.

This should be avoided whenever possible.

To dress the hair in any direction except in that in which it leaves its follicle, is of course injurious. All hairdressing to be recommendable, must be done in such a manner that the hair is not pulled in an opposite direction from that in which it grows.

## Section 5

### *Hats.*

Soft hats of little weight permeable to air are healthier for both summer and winter than heavy, stiff hats. Even the stiff straw hats which are often heavier than "stovepipe hats," the

heavy caps worn so much lately by boys and young men, are a most improper summer headgear. The worst style of hat for men, however, is the silk hat which seems to continue to flourish in spite of its silly shape and uncomfortable qualities.

Those who firmly believe in the danger of tight-fitting hats shutting off the blood supply to the hair bulbs, starving the hair and eventually causing it to drop out, need only to point to the deep furrow which the wearing of this hat causes upon forehead and scalp, to prove this assertion. Of course, this pressure has only little effect upon the blood supply in a healthy body, but it may be of some importance in cases of diseased arteries, sclerosis, anaemic conditions, etc.; these people will notice a continual sensation of coldness on the compressed portion of their heads and should take this as a warning to remove the pressure. But even the perfectly healthy man should not think of keeping a stiff, firm hat upon his head when traveling or taking long walks.

Women frequently obey the laws of fashion by selecting hats of enormous size and considerable weight. Even if they hardly ever interfere with the blood supply directly, indirectly these hats prove themselves of considerable detriment to the hair supply.

First of all these hats of giant size necessitate a large amount of padding which is done with false hair or other substitutes and must be firmly fastened to the hair of the owner by numerous hairpins. Also in order to hold these large hats firmly upon the head, it is necessary to pin them with large hatpins to the hair and in case of windy weather the force exerted upon their broad

brims is considerable. Then as the hair has to withstand the pulling of hat and brim combined, a considerable amount of hair will come out at the next combing, having been loosened and torn from its follicle by the force of the wind.

It would be in vain to preach against the dictates of fashion, but a warning of the consequences, when they are followed too closely without regard to the evil results, ought to be permissible.

Whenever there is a small supply of hair, the choice should fall upon a less cumbersome style of hat and fortunately, no matter what the fashion may be, there is always a choice and a chance for the reasonable one to escape the most extravagant and most dangerous excesses of Madame la Mode.

## Section 6

### *Massage of the Scalp*

Massage has a most beneficial influence upon the normal skin and therefore upon the scalp, especially in certain conditions, by ridding it of the epidermic debris which encumber it, and by rendering the skin more supple and its respiration easier.

Far from recommending the indiscriminate massage of the scalp as it is indulged in by ladies and gentlemen in this country for no reason or complaint, who thereby lose a great many hairs which should be left undisturbed, I shall explain in the following lines what massage of the scalp means and how and when it should be applied.

Experiments made by Fioco and Locatelli in 1902 proved that massage had the faculty of hastening organic changes and

increasing the circulation of the epidermis. It probably has the effect of developing the horny layer of the skin and a special influence upon the nervous system, which renders massage an excellent agent for curing pruritus so often complained of in diseases of the scalp.

There are varieties of massage which the patient can carry out himself, if it must be, but on principle, it must be said, that all massage, no matter how easy it may seem to apply it, is a delicate operation which can do harm when it is badly executed, and which is more effective if the person applying it is expert in this treatment, has the most supple, thinnest fingers, pays the closest attention to the work and possesses more of that electric fluid, if we may call it so, which patients who have had perfect massage applied to themselves best know how to appreciate.

Of all varieties of massage suitable for application to the scalp, the movement massage is most important and most beneficial. It consists of placing the fingers of one or both hands upon a particular place and, without quitting the same, to execute forward and backward movements, backward and forward from side to side in a manner to move the integument over the deeper layers of the skin and to render it thereby more flexible. These simple manoeuvres, which patients can readily learn to carry out themselves, are an excellent means of arresting the beginning baldness and atrophy of the scalp.

This form of massage is often combined with the form which I shall describe next.

Pressure massage consists of pressing and squeezing the skin between the thumb and index finger of one hand, or between the two thumbs, with sufficient force to squeeze out all the contents from the conduits of the sweat and sebaceous glands.

These manoeuvres employed day after day by the patients themselves often end in their infecting themselves, because proper care is not taken. This variety of massage is of great help in *seborrhoea oleosa* or oily seborrhoea and in *seborrhoea sicca* or dry seborrhœa, commonly called dandruff. It should be practised upon the scalp by taking up the skin between two thumbs and taking care not to pull too much upon the hair roots. Afterwards the scalp should be rubbed with some pomade, or with Hoffmann's Anodyne, or Acetone; or best of all, there should be a thorough shampooing of the entire scalp.

Friction massage is another form of treating the scalp for some troubles. It may either be soft or hard and may be given in one direction or forward and backward, either slow in movement or rapid. This is more of a rubbing than a massage effect, but it is proved to be of benefit in cases of threatening or recently acquired baldness; its good results being the stimulation and reawakening of the sensibility of the skin.

If it is used for the purpose of reducing congestion of the integument, as we have it in seborrhoea and its complications, the rubbing is done in parallel, slightly converging lines. This form of massage may be carried out with vigor and the use of great pressure upon the scalp, either for the purpose of getting an effect upon the deeper vascular region or the superficial, the dermicor

epidermic layer of the skin. When this friction massage is undertaken with considerable violence, the ball of the thumb is employed; ordinarily index, middle and ring finger in close contact serve very well to apply a soft, pliant, resisting, intelligent massage.

Some professional masseurs employ pads of chamois leather or some other soft leather, impregnated with some oily, greasy substance; but far better seems to be the use of the finger tips. These should, after thorough aseptic cleansing, be dipped into fresh odorless coldcream; this is far superior to vaseline, which sticks to the fingers and prevents their gliding lightly over the surface that is being treated.

These are the only varieties of massage, executed by the finger, suitable and permissible in treating diseases of the hair and scalp.

A very simple method for those who have neither time nor means to employ massage, at least in cases where energetic treatment is recommended, consists in the following proceeding:

The spread fingers of one hand are inserted into the hair, grasping it about one half inch above the scalp, and pulling it with considerable force. The hair is then taken up together, the right hand taking hold of the entire mass by the lower end, lifting it over the elevated left forearm which is held above the head, and by pulling it vigorously by jerks the scalp is lifted from the underlying cranial bones. This exercise is most beneficial to the growth and improvement of ladies' hair. While it loosens some of the hair which is near the time for falling out, it never

affects the normal growing hair. Besides this, the lifting of the scalp stimulates the blood circulation more than any other method known.

Cleanliness in massage of the scalp is most important; the hands and finger nails (which must be cut short) should first be thoroughly scrubbed with soap and hot water, alcohol and benzine. The scalp also should be previously washed, as the lack of cleanliness may cause pus formation, furnuncles and similar affections of the skin.

## FOREWORD TO CHAPTER VIII

It may seem strange to the reader that a chapter on food is added to the preceding ones on diseases of the scalp, but a few introductory remarks will explain the reason.

The growth of hair depends entirely upon the blood supply.

Anaemic, sclerotic, exhausted, ill-nourished people will grow no hair while their condition is below normal.

Those who have undergone severe operations, as appendicitis, amputation and such, cannot expect to grow hair nor keep the amount of hair they have until their blood supply has reached its former level.

To make blood, food is needed; food in proper amount and proper quality.

To demonstrate further the great importance of proper food and particularly of the proper manner of eating it, I give the latest statistics that have been established under the supervision of a famous dermatologist, Dr. Lucien Jacques, of the Saint-Antoine Hospital of Paris.

Dr. Jacques requested his assistant, Dr. Henri Bulliard, some time in 1910 to observe all the patients whom he would send to him complaining of abnormal hair loss without showing evidences of disease of the scalp sufficient to account for such loss of hair.

These patients were to be watched and their habits scrutinized for two years.

The result of these careful and painstaking observations have just been published in a volume of 400 pages.

A careful perusal and resumé establishes the fact that every one of the 71 patients observed, who had consulted Dr. Jacques for great loss of hair, suffered from gastro-intestinal disorders.

The majority of them ate too fast, not chewing their food, nor mixing it with the salivary secretions.

They also ate too often; they drank alcohol with their meals in excess, or indulged in copious draughts of tisanes, or tea or coffee.

They read books or papers while eating, occupying their mind when all their attention should have been given to masticating properly.

All these 71 patients received treatment for alimentary troubles only and their indigestion having been overcome, their injurious habits corrected, the hair loss ceased to be abnormal, new hair grew, and the general health improved.

The chapter on food will aid you to make blood rapidly and of good quality.

# CHAPTER VIII

## ON FOOD IN GENERAL AND SPECIALY FOR THE GROWTH OF HAIR

### SECTION 1

### *Food in General*

To understand correctly what food represents for the human body, it is practical to think of an engine and its boiler. To generate force and heat the boiler must be fed with combustibles. The more readily these burn up, the quicker and more intense is the heat and power produced. So it is with the human body. Our stomach is the boiler. The indigestible parts of the food and those portions which leave the body by way of the bowels, represent the ashes and clinkers.

To compute more easily the amount of food a human being requires, old, young or middle-aged, feeble or strong, active or inactive, or *very. active,* we have a unit measure called calories which represent a unit of food necessary to repair waste of tissue, to keep up the temperature of the body at 98½° Fahrenheit and to create force and energy enough to carry on the daily tasks.

I will not go into particulars as to proteids, nitrogenous foods and fats, the three necessary substances contained in the food and which are part and parcel of the different constituents of our anatomy and are needed to replace whatever portion of it that has been used up.

The mechanical method of assimilating food consists in its mastication, the mixing of it with the saliva, which is secreted in large quantities by the salivary glands by the act of placing food in the mouth, by the moving of the jaws, and also by the stimulation of the gustatory nerve; further, by the deglutition of food by swallowing and its entrance into the stomach, which is merely a receptacle for the food in which it is churned, mixed, macerated and thrown about, finally dissolved by the juices running freely from the walls of the stomach.

Very little of the material entering the stomach is absorbed by its walls; except alcohol, a little water, a few medicines and perhaps milk heated to the temperature of the blood and taken into the stomach when it does not contain a particle of food. (Bulkley's method, see below.)

After churning steadily, an ordinary meal, without such accessories as cheese, pudding, coffee, etc., would leave the stomach in from 4 to 5 hours, while any mixtures as those just mentioned, and, of course, some other foods difficult to digest, may delay this process 2 to 3 hours.

The food, having been forced from the stomach by rhythmic contraction, now enters in fluid form the duodenum, a short canal of nine inches in length, there to be mixed with the juices from the gall bladder as well as from the pancreas, necessary to further its digestion. These juices emulsify the fatty particles of the food, change the starch into sugar, and by their presence prevent putrefaction in the intestines.

Innumerable lymphatic vessels run along the intestines,

which are some thirty-six feet in length, and take up all the useful particles from the chyme flowing along the intestines and carry it with them to the liver, where they are turned into life-sustaining blood.

Whatever is indigestible or undigested remains in the bowels and leaves them in the form of fecal matter after an excess of water has been taken up by the large intestines. After this brief explanation of the digestive process, I shall explain in the following section the most important functions of the food we are accustomed to take.

## Section 2

### *Water*

As the human body is two-thirds of its weight water, it is easily understood that water is a very important part of the food supply. It is an almost universal solvent and for that reason alone is indispensable.

The muscles, cartilages, tendons and bones owe their pliability and elasticity to water. From 65 to 90 ounces (5 pints) of water are required daily by a healthy man.

Part of this is taken as an ingredient of solid food. The manner in which our body uses this quantity is about this: 28 per cent of it is eliminated by the skin, 20 per cent by the lungs, 50 per cent by or through the kidneys.

Most of this water is, of course, taken by people in the shape of beverages containing it, and by many these beverages are substituted for plain water altogether.

In some countries light wines, beer and other fermented drinks replace water entirely.

The most common error in daily diet is the neglect to drink water in sufficient quantities. To show by a few examples how important water is to the human economy, note the following uses to which it is put in our bodies. Prof. W. Gilman Thompson says:

*First,* it enters into chemical composition of the tissues.

*Second,* it forms the chief ingredient of all the fluids of the body and maintains their proper degree of dilution.

*Third,* it prevents friction and uncomfortable symptoms which might result from their drying, by moistening various surfaces of the body, such as mucous membranes (mouth), serous membranes (lungs), eyelids, etc.

*Fourth,* it furnishes the fluid medium in blood and lymph by which food can be taken to remote parts of the body and waste material carried off, thus helping rapid tissue changes.

*Fifth,* it serves as a distributor of body heat.

*Sixth,* it regulates the temperature of the body (perspiration) by absorption and evaporation.

*Seventh,* taking water into the stomach; one or two tumblers of cold water in the morning on an empty stomach greatly favors the evacuation of the bowels. Water being quickly absorbed increases the filling of blood-vessels which in turn stimulates the intestinal secretion; hence the activity of the lower bowels when water is taken on an empty stomach. Lukewarm water when about 90° Fahrenheit is an excellent emetic. Boiled water is

antiseptic and antifermentative. The flat taste of boiled water may be rectified by pouring it slowly from one vessel, through the air, into another, or by shaking it in a carafe. If taken 2 to 3 hours after meals, it will assist digestion by diluting the contents of the stomach. Two and a half to four pints of water ought to be the daily average for an adult to consume. Copious draughts of water are not fattening except by promoting tissue changes. Hot water, as hot as can be sipped, quenches the thirst much better than cold.

Salt has no force-producing power, but is necessary for the formation of tissue, bones and teeth.

## Section 3

### Animal Foods

### § 1. *Milk*

Milk, eggs, meat, fish, gelatine and fats are classed under the head of animal food, and their most important characteristics, their value as food and force producers, will be briefly explained.

Milk is the most valuable of all foods. One pint of milk is equal in nutritious value to 6 ounces of meat. Milk alone, however, is not sufficient to supply an adult with nourishment in cases of severe illness, as Bright's disease of the kidneys, Tuberculosis, Anæmia, etc. Milk is recommended as a partial diet to the extent of half the amount of daily food consumed.

Infants for the first two years, children suffering from infectious diseases, typhoid fever patients, patients suffering from

acute diseases of the kidneys, chronic gastric catarrh, gastric ulcers, and neurasthenic patients, will do well on an exclusive milk diet.

While one pint of milk unwatered (whole milk) has a food value of 325 calories or one pound,

| | | |
|---|---|---|
| One pound of cheese has | 1965 | calories. |
| One pound of butter | 3605 | " |
| One pound of beef sirloin | 1040 | " |
| One pound of salt pork | 3715 | " |
| One pound of chicken | 325 | " |
| One pound of cornmeal | 1645 | " |
| One pound of oatmeal | 1860 | " |
| One pound of beans | 1590 | " |
| One pound of apples | 255 | " |
| One pound of turnips | 135 | " |
| One pound of potatoes | 325 | " |
| One pound of beets | 170 | " |

Furthermore, milk is frequently altered by adding pure or impure water to it, or coloring matter, or preservatives, thickening substances (flour).

The most important uses of milk, however, are the following:

As a food for infants and adults; a source of special food products as Koumiss, cream, butter and cheese. It may also be given hot to loosen a cough; it soothes the bowels; it mixes well with many foods, cereals, bread, etc. It serves as a vehicle for many remedies. It makes a healthy beverage when mixed with

vichy or seltzer water for invalids and gouty people, and is the best ingredient for rectal feeding of the very sick.

The methods most in use for improving the digestibility of milk are: skimming, boiling, diluting with aerated water, or with starchy food.

Prof. Duncan Buckley of this city recommends for anæmic and weak people the following method of taking milk, which I have myself used in my practice hundreds of times with great success: One hour before a meal, when the stomach should be absolutely empty, a glass of milk heated to a temperature of 100° F. is to be taken in slow sips without a morsel of food of any kind or addition of anything whatever. He explains convincingly how at the empty state of the stomach (the alkaline stage), the milk when ingested is not mixed with the acid gastric juice, is not churned like other food, but is taken up by the lymph vessels and carried by the thoracic duct into the subclavian vein and thus reaches the blood to be oxidized by the lungs before it is submitted to the liver for its action.

The most various and difficult class of patients has been subjected to this experiment with often marvelous results. The only difficulty there is with carrying out this wonderful method of quick blood making is the silliness and obstinacy of the patient who is to be benefited. Either a morsel of bread is added to the milk or a cracker is eaten with it, or an egg or whiskey put in it, all this contrary to the rule which is to take nothing but the milk, as the *least* addition to it or presence of any food whatever in the stomach causes it to contract, churn and pour out gastric

juice, which prevents the milk being absorbed as intended. Other ways of using milk will be found in cook-books or are mentioned in the food tablets following.

### §2. *Cheese*

Cheese is made of the casein of milk and forms a highly nutritious food. Where meat is scarce and expensive the poor consume large quantities of it and keep in good condition. Many are the varieties of cheese, hard and soft, rich and poor (made without fat). The flavor of cheese depends upon its being made from whole or skimmed milk. Cream cheese, Roquefort, Edam, Cheshire, Camembert, Emmenthaler and Swiss cheese are all similar, containing about 70—80 per cent fat and are very nutritious when they can be digested.

### §3. *Cream*

Cream, the fat of milk, is one of the most wholesome, as well as agreeable foods in the form of fat. When taken too rich it may disorder the digestion, while diluted with equal parts of water or preferably lime-water, it is easily borne by the stomach. Those who are inclined to flatulency, obesity, gallstones and gastric disorders should avoid cream, while those who suffer from exhaustive illness and tuberculosis or suppurating diseases of the joints will be greatly benefited by its use.

### §4. *Butter*

Butter which is made of the cream of milk is one of the most nourishing foods, and when taken with other foods, as bread, hot toast, is digested readily by the weakest stomach.

## §5. *Eggs*

Invalids and delicate persons should have *fresh* eggs only. To test their freshness, hold the egg between the eye and a candle; if the light penetrates the centre of the egg, it is fresh; if it is more transparent at the ends, it is stale. Or, put two ounces of common salt into a pint of water; when an egg is one day old it will sink when placed in this brine, but will not go to the bottom; an egg three days old will barely float beneath the surface, and one a fortnight old will float above the surface, only partially dipping beneath it. This difference is due partly to loss of water, partly to development of gases of putrefaction in the egg.

Eggs are a useful addition to a highly concentrated diet, particularly in wasting diseases, as tuberculosis. Some patients digest easily from 8 to 12 eggs a day. Added to milk, salt, cod-liver oil, bouillon, soups, etc., they may prove of great advantage to such patients.

It makes a great difference whether raw or cooked eggs are eaten, the first digesting in 1½ hours, the latter requiring 3½ to 4 hours.

As the egg contains all the necessary ingredients to support life, it proves an important item for our daily diet.

## §6. *Meats*

Too much meat is eaten in this country by many people, to the injury of their health. While Germans consume 69, French 74, English 105 pounds of meat per capita annually, Americans

use 120 pounds. Consumptives and those suffering from dyspepsia, diabetes, chronic gastritis, obesity, flatulency, would be benefited by a meat diet; the healthy normal man gets along very well with very little meat. Raw meat is at present very much in favor, but it soon becomes distasteful to most people, palling upon their appetite and often excites positive loathing. Young meat is better than old, but all meat is toughest immediately after killing.

Here follows a list of meats arranged by Prof. Thompson according to their digestibility:

Oysters, soft boiled eggs, sweetbreads, white fish (boiled or broiled), such as bluefish, shad, weakfish, smelts;—chicken, boiled or broiled, lean roast beef, or eggs scrambled, omelette, mutton roasted or boiled;—squabs and partridge, bacon crisp, roast fowl, chicken, capon, turkey, boiled;—tripe, brains, liver, roast lamb, chops, mutton or lamb, corned beef, veal, ham, duck, snipe, venison, rabbit, game, salmon, mackerel, herring, roast goose, lobster and crabs, pork, smoked, dried or pickled fish and meats in general. Furthermore:

Beef, raw or chopped fine, will take 2 hours to digest.
Beef, half done, will take 2½ hours to digest.
Beef, well done, will take 3 hours to digest.
Beef, thoroughly roasted, will take 4 hours to digest.
Mutton, raw, will take 2 hours to digest.
Veal, cooked, will take 2½ hours to digest.
Pork, cooked, will take 3 hours to digest.

Beef tea is of little value as a food if not properly prepared. Tender, raw meat should be cut into small pieces ¼ inch thick, macerated in cold water for 5 or 6 hours. Water in the proportion of 1 pint to 1 pound of meat, must then be added, ten drops of hydrochloric acid put in and this solution heated gradually to 106° F., which should take from 15 to 30 minutes. This is best done by putting the vessel containing it into another larger one holding boiling water. Before using, the fat floating on the surface should be removed, as it looks unappetizing. A crust of bread dipped beneath the surface will remove the floating fat. If not very nutritious, beef tea thus prepared is at least a pleasant stimulant to the stomach and nervous system. The most serious objection to preparing good beef tea is the length of time it takes.

Beef tongue is very tender, but on account of its rich supply of fat is not easily digested by delicate stomachs.

Tripe, made from the thin stomach of the cow, when tender and well cooked is easy to digest, but somewhat too fat.

Heart is sometimes eaten, but is tough and tasteless.

## §7. *Veal*

Veal when taken from animals killed too young is tough, pale in color and dry, therefore indigestible. It contains more gelatine than beef and differs from it in flavor. As a general rule, dyspeptic people should avoid veal as well as lamb.

### §8. *Mutton*

In this country the supply of mutton is not the best, and very often it is found to be exceedingly tough and stringy and quite difficult of digestion.

### §9. *Liver and Kidney*

These are oftener eaten than any other viscera; they are only fairly nutritious. When "deviled" or stewed with rich sauces they are very indigestible.

Sweetbreads consist of the pancreas of the calf; this is a large gland situated near and partly around the stomach. It is tender and digestible and is a pleasant food.

### §10. *Fowl*

Chicken is famous for being the most digestible meat cooked, broiled, roasted or boiled. The white meat is to be preferred to the dark, although the latter has the better flavor.

Turkey and capon are less easily digested than chicken.

Ducks and geese are often too fat for easy digestion, but they make a fine food when young and properly prepared.

Squabs are good food and the breast of a roast squab may be offered to a sick person before any other meat whatever.

### §11. *Ham and Bacon*

Bacon and ham can be more easily digested than pork. They are much prescribed in Carlsbad and other similar mineral springs as an article of diet for those who suffer from gastric disturbances. Particularly the smoked ham seems better adapted

and is universally recognized as one of the wholesomest forms of meat. "Whether boiled or raw it seems, as a rule, to be more easily digested by weak stomachs than almost any other meat."

Bacon should be broiled and crisp and be friable or easily broken into small bits.

### §12. *Lamb*

Good lamb is expensive, and, as that is the only kind to be recommended, it is well for invalids and those with sensitive stomachs to try to do without it.

### §13. *Venison*

Venison should not be eaten when too old, although the idea prevails that it is then more easily digested. It is very similar in its composition to lean beef.

### §14. *Pork*

Pork, although a tender-fibred meat, is particularly difficult of digestion on account of the great quantity of fat it contains. Pork ribs are 40% fat.

## Section 4

### Vegetable Foods

### §1. *Sugar*

There are many varieties of sugar, as cane sugar, grape-sugar, glucose, fruit sugar and sugar of milk. They differ in sweetness and digestibility.

When used as food they have the same value as starches which later have to be converted into sugar before being assimilated in the body.

They are an excellent food, giving energy and heat and fattening the body, but when starches or fats are eaten they are superfluous.

Experiments in the German and English armies have proved that a liberal allowance of sugar in the diet tends during manoeuvers to maintain strength, lessen hunger and thirst and prevent exhaustion. Its pleasant taste makes it a favorite food, as it pleases the palate better than starches.

On account of its antiseptic and preservative power it is much used in the business of preserving fruits. Sugar is quickly dissolved in the stomach and gives no trouble to the digestive organs.

Many people acquire an inordinate fondness for sugar, but continuous overindulgence in this food causes flatulent dyspepsia, constipation and other disorders of nutrition.

## §2. *Cereals*

The cereals most in use are products of wheat, corn, rice, rye, barley, oats and buckwheat, which are manufactured into flours and meals.

According to Atwater's tables the percentage of starch in vegetable-food is as follows:

| | | | |
|---|---|---|---|
| Wheat bread | 55.5 | Potatoes | 21.3 |
| Wheat flour | 75.6 | Sweet potatoes | 21.1 |
| Graham flour | 71.8 | Turnips | 6.9 |
| Rye flour | 78.7 | Carrots | 10.1 |
| Buckwheat flour | 77.6 | Cabbage | 6.2 |
| Beans | 57.4 | Melons | 2.5 |
| Oatmeal | 68.1 | Apples | 14.3 |
| Cornmeal | 71.0 | Pears | 16.3 |
| Rice | 79.4 | Bananas | 23.3 |

## §3. *Bread*

The most important bread in use, both from the standpoint of its nutritive value and the quantity, is made of wheat flour.

Bread made from good flour should be porous, but not filled with large holes, and should have the proper consistency and firmness to allow of its being cut in thin slices.

Tough, moist, imperfectly baked bread or hot bread may excite fermentation in the stomach, causing heartburn and other symptoms of dyspepsia. Such bread may be rendered more digestible by heating it, in order to get rid of the moisture. By toasting, bread is made easier of digestion; buttered toast, particularly when the butter is spread on the toast while it is still hot, is excellent food for invalids. The butter enables one to eat more bread in this form. Milk toast for the same reason is an admirable means of giving milk to patients unable to drink it.

Graham bread contains the outer coating of the wheat

kernel, called bran. It acts as a laxative by irritating the mucous membrane of the intestines.

Gluten bread is made from gluten flour, is useful for diabetic patients and those afflicted with constipation. It keeps fresh much longer than wheat bread, and if well made is wholesome and easily digested.

Crackers are nutritious and very easily digested. Water crackers made of water and flour, milk crackers made of milk and flour, are the simplest.

### §4. *Corn*

Corn is much in use in its preparations, hominy, cornmeal, cracked corn, etc. It is a wholesome cereal and proves very fattening both to man and animals.

### §5. *Rice*

Rice is the staple food for a majority of the world's inhabitants, although not so much in use in this country except in the South. It contains more starch, 79%, than any other cereal, is very digestible when properly cooked and is very nourishing.

Containing no nitrogen, which the human system needs for its maintenance, rice cannot be relied upon without either meat or broth, or milk and butter being used with it.

### §6. *Barley*

Barley as a food is mainly employed in the United States to thicken soup, although it is almost as nutritive as wheat. Barley water makes an excellent demulcent drink for children and invalids.

## §7. *Oatmeal*

Oatmeal, made of oats which contain a considerable amount of fat, protein, salts and starch, have been used in Germany more than a thousand years, mostly in the form of "Hafergrütze," or oatmeal. Oatmeal gruel and porride are, however, extensively used in the United States. For those who can digest oatmeal well, it is one of the cheapest and most satisfying of foods. To be palatable it should be thoroughly cooked, which at the same time renders it more easy of digestion.

## §8. *Vegetables and Greens*

Vegetables are not economical as a diet for a laboring man, for in order to get enough nutriment from them he has either to buy the very best and most expensive cereals and legumes, or else use such large quantities of them as to do away with all economy. The following vegetables are in common use and contain the greatest percentage of starch and sugar:

Potatoes (white and sweet), beans, lentils, corn, peas, carrots, parsnips, beets and turnips. Some vegetables are pungent in taste and stimulant in their action: leeks, onions, garlic, herbs in general, mustard, cresses, mints, asparagus and radishes. These increase the flow of saliva and the gastric juices, thereby improving digestion.

Other vegetables prove laxative on account of their chemical composition, as spinach, tomatoes, green vegetables when fresh and well cooked. Cucumbers and corn aid the peristaltic action of the bowels by their seeds and residue.

## §9. *Legumes*

Among this class of vegetables, peas, beans, lentils and peanuts rank next to cereals in importance. They are extensively eaten in this country with the exception of lentils. On account of the toughness of their envelope when old, lentils must be cooked for a long time to make them digestible and it is advisable to soak them in cold water previous to cooking, in order to render them easier of digestion. When fresh, they contain much water and need no soaking. They are best employed in soups, and if pork in some shape is cooked with them they gain much in food value. Peanuts, when thoroughly roasted, are very palatable, but indigestible. Peanut flour made of ground and bolted peanuts, contain per pound as much nutriment as three times that quantity of beef, or twice the same weight of peas.

## §10. *Roots and Tubers*

This is a very important class of vegetable food, containing both starch and sugar. Some are very fattening and for this reason are avoided by the obese.

Potatoes are the first in rank in this class. First, because they are easily cultivated in a great variety of soils, and secondly, on account of their digestibility when properly prepared. In Ireland and in the poorer districts of Germany this vegetable constitutes a large proportion of the daily food of the inhabitants. They are often made more nutritious by combining them with meat-broth, fat, butter and salt or buttermilk. The Germans

employ potatoes in as many as forty different dishes, even cake is baked with potato flour, not to mention the different varieties of dumplings and salads. Potatoes should, however, be avoided by those whose digestive apparatus is out of order, unless they are freshly baked, perfectly mealy and crumble easily. New potatoes are never mealy, require more cooking and are less digestible than those of medium age. Sweet potatoes, while containing less starch than white ones, have more sugar. They are, however, often stringy and sodden and in this condition are hard to digest.

Beets, when young and tender, are very nourishing and contain much sugar. When eaten in the form of salad with vinegar and oil, they make a useful variety in the diet. The succulent variety of tubers, such as carrots, parsnips, turnips and radishes, should be eaten young and fresh, otherwise they become dry and less palatable, and lose much of their nutritious quality.

## §11. *Green Vegetables*

These contain little nutriment compared with cereals and tubers, but add a pleasing change to the diet. The fact that they contain as much as 90% (or more) of water makes them useful on that account. They have a better flavor when young; when old, they become stringy and tough. Persons of feeble digestion should avoid them entirely when they are not fresh and young, as they overtax the digestive system and irritate the alimentary canal. On the other hand, it must not be forgotten that on account of their bulk they help to overcome constipation and pro-

mote movements of the bowels. The most important of the green vegetables is the cabbage family, of which there are not less than seventy varieties. Some of the representatives of the cabbage family are cauliflower and seakale (English). Spinach, beet-tops, dandelion leaves, turnip-tops are all useful green vegetables, but contain almost no nutriment.

Lettuce is a type of vegetable of which the leaves are most often eaten raw. The favorite mode is to eat them as a salad with vinegar and oil. Their only nutriment consists of the oil which is added to them.

Celery is a wholesome vegetable when cooked in milk until it is quite soft, but eaten raw, is of little value.

Tomatoes are wholesome eaten with vinegar and oil. They also form a popular ingredient of strong condiments, such as tomato catsup, etc. They are much esteemed for canning, as they retain their original flavor better than any other vegetable.

Artichokes, a variety of the thistle, contains tannin and mucilagenous matter, but have nothing nutrient in their composition.

Cucumbers are generally eaten raw with oil and vinegar, but on account of the large seeds they contain are very indigestible unless carefully prepared. When eaten raw they often cause colic and diarrhoea.

Asparagus, a vegetable of delicate flavor and one of the first to appear in early spring, is a general favorite. It is easily digested when young, even by invalids. It has peculiar chemical

properties, influencing kidney secretions. The notion that it has any influence upon the heart action or is a sedative, is imaginary.

Rhubarb, also called "Pie-plant," is an excellent vegetable when stewed. The flavor being tart and the fibre stringy, cooking renders it soft and digestible. It has laxative properties and proves beneficial in chronic constipation.

Pumpkins and squash contain much water and coarse fibre. When young and tender, squash is fairly digestible, but has no value as a food.

Onions, garlic and leeks are eaten fresh, but are kept until they are dry and hard for flavoring salads, meats, stews, sauces, etc. They are of slightly more use than the last four or five vegetables mentioned, and when boiled with milk young leeks and onions make a very palatable and wholesome food.

Cranberries are really more a fruit than a vegetable, but they are generally eaten with meat as a vegetable. They are serviceable for their agreeable acidity and flavor. To make them digestible, however, it is necessary on account of their tough coating to cook them very thoroughly.

## §12. *Fruits*

In general, fruits contain mostly water, some starch, sugar, cellulose and acids. The most important acids are malic (apples, pears, peaches, apricots, currants, gooseberries), citric (lemons, limes and oranges), and tartaric (grapes).

Among the least acid fruits are peaches, sweet pears, sweet apples, bananas and prunes. Moderately acid are strawberries.

The most acid are lemons and currants. The uses and properties of fruits are as follows:

1. To furnish nutriment.
2. To convey water to the system and relieve thirst.
3. To introduce various salts and organic acids, which improve the quality of blood and react favorably upon the secretions.
4. As antiscorbutics.
5. For their action upon the kidneys.
6. As laxatives and cathartics.
7. To stimulate the appetite, improve digestion and give variety to the diet.
8. As special "cure" for certain diseases, like the grape cure, although their specific action is very doubtful.

*When to eat fruit.*—Cooked fruit may be eaten with any meal. If people wish to have the medicinal effect of such fruit as figs or apples, they must be taken at bedtime upon an empty stomach or an hour before breakfast with a glass or two of cold water, and may be relied upon to have a very good effect upon the bowels.

The poorest time to eat fruit is at the conclusion of a hearty meal, at which a considerable variety of food has already been consumed.

Fruit eaten when it is out of season is, generally speaking, less wholesome.

All fruits, such as berries, the seeds of which are eaten, are much less liable to produce irritation of the intestine when taken

with bread or other bulky, starchy food. Skin and seeds of larger fruit are absolutely indigestible.

Dried fruits can be eaten less abundantly than fresh fruits. Currants and citrons are entirely indigestible. Figs, however, or prunes, raisins, dates, etc., are wholesome and contain considerable nourishment.

The most digestible fruits are grapes, oranges, grape-fruit, lemons, cooked apples, figs, peaches, strawberries and raspberries; less digestible are melons, prunes, raw apples, pears, bananas and fresh currants.

## §13. *Nuts*

The meat of nuts, except chestnuts and cocoanuts, contains 50 times as much fat as wheat flour and has double the fuel value, *i. e.,* energy producing power. One pound of unshelled nuts will furnish the same amount of energy as one pound of flour. If nuts were not lacking in protein, they would make an ideal food.

Almonds, although wholesome and nutritious, should not be eaten in cases of irritable stomach, but when digestion is unusually slow, a few salted almonds during a meal will be beneficial.

English walnuts are very rich in fat and nutritious on that account. They are also known to assist in overcoming constipation when eaten liberally between meals.

## Section 5

### Fats and Oils

One-fifth of the human body is fat, and no death from starvation occurs until 9% of the fat has been consumed. Starches and sugars supply the body with most of this fat.

The uses of fatty food are as follows:

1. To furnish energy for the development of heat.
2. To supply force.
3. To serve as covering and protection for the body.
4. To give rotundity to the human form.
5. To save the tissue from disintegration.
6. To serve as a storage for energy.

Fat, when eaten, is not deposited again as fat in the tissues of the body, but goes through the regular process of digestion in producing force and heat. All fats and oils taken as food serve the same purpose. The notion that fat can be rubbed into the body and be absorbed by the skin is a mistake, for very little oil goes through the skin. Neither does fat or oil thus applied reduce the temperature of the body. Not every one can digest fat and oil, even when taken in conjunction with other food.

Dyspeptic people should avoid fat as much as possible, and for special nutrition good butter, cream or cod-liver oil should be selected.

## §1. *Animal Fats*

Lard and oleomargarine, the latter prepared from fresh beef fat and much better than bad butter, are the fats most in use for the purpose of nourishment.

Bone-marrow is easily digested and has long been a wholesome food, much appreciated by those who know it.

## §2. *Vegetable Fats*

The principal vegetable fats are from seeds. Such are olive oil, from olive seeds, cotton-seed oil and nut-oil.

Olive oil comes largely from Italy and France, although Southern California furnishes a large quota of this oil now used in the United States. The best oil certainly comes from Italy, where the fruit is crushed between stones and the pulp pressed in bags. The first oil pressed out is the best. A second oil is gained by adding boiling water to the pulp and pressing it again. This oil is apt to became rancid. Cotton-seed oil is the favorite substitute for olive oil, especially in preserving the popular sardines, which formerly were immersed in pure olive oil only. Cocoa butter, nut-oil, cocoanut oil, peanut oil and almond oil are little used for food purposes.

## Section 6

### Crustaceans

### §1. *Lobsters, Crabs and Shrimps*

Lobsters, crabs and shrimps, although they make wholesome food when fresh, for healthy people, should never be eaten by dyspeptics nor invalids.

They are the scavengers of the sea, and when not thoroughly cleaned or properly cooked, may be poisonous from contamination with putrid matter.

### §2. *Shellfish*

Oysters, clams and mussels are very nutritious, and the former when fresh and when eaten raw or properly cooked, are excellent food for invalids.

When preparing oysters for sick persons always use the soft part only and never fry them. They all (oysters, clams and mussels) impart a pleasant flavor to milk and broth, and clam chowder is particularly famous for its flavor.

## Section 7

### Amount of Food Required

Here follows a table (arranged by Dr. F. W. White, Boston) which shows plainly in calories how much food is necessary to replace tissue place tissue waste, to supply energy and keep up the temperature of the human body.

# Table of Calories

| Foods as eaten | Household measure | Calories |
|---|---|---|
| Milk | 1 glass | 160 |
| Skimmed milk and buttermilk | 1 glass | 80 |
| Cream—thin | 1 tablespoon | 30 |
| Cream—thick | 1 tablespoon | 60 |
| Condensed milk—sweetened | 1 heaping tablespoon | 70 |
| Condensed milk—unsweetened | 1 heaping tablespoon | 35 |
| Butter | 1 par or ball | 80 |
| Cheese—cream | 1 inch cube | 65 |
| Cheese—skin-milk | 1 inch cube | 45 |
| Cheese—American | 1 inch cube | 70 |
| Eggs—whole | 1 | 75 |
| Eggs—yolk | 1 | 55 |
| **MEAT AND FISH** | | |
| Beef tea—clear soups | 1 teacup | 5-20 |
| Fish—lean (cod, flounder) | 1 medium slice | 35 |
| Fish—fat (shad salmon) | 1 medium slice | 105 |
| Meat—lean | 1 medium slice | 70 |
| Meat—medium fat | 1 medium slice | 130 |
| Meat—fat | 1 medium slice | 200 |
| Oysters—raw | 1 | 8 |
| **CEREALS AND VEGETABLES** | | |
| Bread—white or graham | 1 slice | 70 |
| Vienna roll | 1 | 115 |
| Crackers—Uneeda | 1 | 30 |
| Cereals cooked moist | 1 heaping tablespoon | 35 |
| Cereals eaten dry | 1 heaping tablespoon | 20 |
| Shredded wheat | 1 heaping tablespoon | 110 |

| Food as eaten | Household measure | Calories |
|---|---|---|
| Gruels (cereal) | 1 soup plate | 75 |
| Thickened or cream soups | 1 soup plate | 160 |
| Macaroni | 1 heaping tablespoon | 25 |
| Potato boiled or baked | 1 medium | 90 |
| Potato mashed | 1 heaping tablespoon | 35 |
| Rice boiled | 1 heaping tablespoon | 40 |
| Corn canned | 1 heaping tablespoon | 35 |
| Peas fresh | 1 heaping tablespoon | 40 |
| Lima beans canned | 1 heaping tablespoon | 20 |
| Squash | 1 heaping tablespoon | 20 |
| **FRUITS** | | |
| Apple, pear | 1 medium size | 75 |
| Apple sauce | 1 heaping tablespoon | 70 |
| Banana | 1 medium size | 100 |
| Orange | 1 medium size | 70 |
| Dried figs, dates raisins | 1 medium saucerful | 350 |
| **DESSERTS** | | |
| Fruit jelly sweetened | 1 heaping tablespoon | 160 |
| Ice cream | 1 heaping tablespoon | 135 |
| Sponge cake | 1 slice | 75 |
| Pudding—rice, tapioca | 1 heaping tablespoon | 80 |
| **MISCELLANEOUS** | | |
| Sugar | 1 heaping teaspoon | 33 |
| Honey | 1 heaping teaspoon | 33 |
| Olive Oil | 1 teaspoon | 37 |
| Nuts | 1 heaping tablespoon | 165 |
| Cocoa powder | 1 heaping teaspoon | 50 |

For example, an inactive person weighing 150 lbs. needs 1800 calories, a very hard working man of the same weight needs 3500-4000 calories to restore tissue, to give the needed force and afford the body the normal temperature.

Each pound of body weight respectively requires from 12-30 calories per day to keep up normal conditions.

The overfed can easily understand how by reducing the allowance per pound of body weight they may reduce their volume, the underfed vice versa by increasing the amount of calories per pound.

| ADULTS | Body Weight. | Calories per pound. | Total Calories. |
|---|---|---|---|
| Inactive | 150 lb. | 12 | 1800 |
| Moderately Active | 150 lb. | 15 | 2200 |
| Light Work | 150 lb. | 17 | 2600 |
| Moderately Hard Work | 150 lb. | 20 | 3000 |
| Very Hard Work | 150 lb. | 25-30 | 35-4000 |

## Section 8

### Value of Food in Common Use According to Calories

When studying this list it is of great profit to remember the value in calories of such inexpensive and simple foods as milk, cream, sugar, butter, bread (Vienna rolls), macaroni, ice cream, olive oil, nuts and cocoa powder or chocolate. Where extra food is necessary it is important to remember that a tablespoonful of nuts is as valuable as a good-sized steak, one tablespoonful of olive oil likewise, one glass of milk is of more value than a good-sized piece of meat, etc., etc.

## Section 9

### Special Food for Promoting the Growth of Hair

It is impossible to lay down absolutely certain rules for a diet to improve the growth of hair or to accelerate the same without looking into the general condition of the patient who is consulting us.

There are many agencies at work to impede the growth of hair, as you have seen in the preceding chapter, and each individual case may require a certain specified regime as to food and medicine.

To advise the choice of certain foods to help in the development of new hair, we consider the chemical composition of hair principally, and select such foods as contains these chemical ingredients.

As we know the hair has 5% sulphur and ashes, we give eggs fresh and raw, raw milk and oatmeal, which contains 22% sulphur.

Hair also contains 20% lime which we introduce into the system by ordering soups made of 2 parts meat, 1 part bones of young or old animals; also commercial gelatine may be employed in place of the bone soup which takes a long time to cook.

The 10% iron which hair holds is found in eggs.

Toast and rye bread supply lime, and carrots have enjoyed the reputation of a hair producer for centuries and are given to horses on that account, without anyone knowing on what principle this is done.

The following list of food for promoting the growth of the hair is approved by specialists both here and abroad:

Raw Eggs Carrots Oatmeal

Toast and Roasted Bread

Raw Milk

Soups made of two parts of meat and one part of bones of old or young animals

Gelatine

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# PRESCRIPTIONS

### Hair Oils

℞. Olei olivarum ..... 27.0
Olei bergamotti. ..... 3.0
M. S.—Use one teaspoonful on dry scalp once or twice a week.

℞. Olei amygdalarum ..... 45.0
Olei jasmini ..... 20.0
Olei rosarum gutta..... i
M. S.—Use one-half teaspoonful once or twice on scalp when too dry.

℞. Tannini .....1.0-5.0
Alcoholis .....60% qu. s.
Olei amygdalarum.....ad. 50.0
M. S.—Use on oily scalp.

### Hair Tonics

℞. Resorcini ..... 2.0
Tr. Myrrhæ ..... 24.0
Aquæ destillat .....160.0
M. S.—Hair Tonic. Rub in scalp daily.

℞. Quiniæ sulphatis ..... 1.3
Acidi sulphurici qu. s.
Tr. cantharidis ..... 32.0
Hazeline ..... 64.0
Glycerinæ ..... 32.0
Aquæ florum aurant.....ad. 224.0
M. S.—Hair Tonic. Rub in scalp daily.

℞. Tinct. cantharidis ..... 56.0
Tinct. cinchonæ ..... 64.0
Tinct. benzoes ..... 24.00
Spir. lavandulæ ..... 48.0
Olei ricini ..... 8.0
Alcoholis .....ad. 320.0
M. S.—Hair Tonic. Rub in scalp twice a week.

### Scalp Lotions for Oily Hair

℞. Acidi tannici ..... 5.0
Spiritus lavandulæ.
Spiritus rosmarini...aa. ad. 100.0
M. S.—Lotion for drying oily hair.

℞. Naptholi ..... 1.0
Spiritus lavandulæ.
Spiritus rosmarini...aa. ad. 100.0
M. S.—Scalp lotion for drying greasy hair.

### Scalp Lotions for Dry Scalps

℞. Tr. cantharidis .....2.0-5.0
Olei ricini .....5.0-10.0
Alcoholis .....ad. 100.0
M. S.—Lotion for oiling hair.

℞. Resorcini ..... 4.0
Olei ricini ..... 5.0
Olei bergamotti .....gtt. v
Alcoholis .....ad. 200.0
M. S.—Lotion for oiling hair.

### Pomade

℞. Butyri cacaonis ..... 25.0
Essentiæ rosarum .....gtt. 22
Lanoline .....ad. 100.0

### Sulphur Salve

℞. Sulfuris præcipitati ..... 5.0
Olei rosarum .....gtt. ii
Vasiline flavi .....ad. 50.0
M. S.—Use on scalp.

**For Seborrhœa**

℞. Hydrargyri chloridis cor rosivi ..... 0.25
Euresolis ..... 7.50
Spir. formicarum ..... 30.0
Olei ricini ..... 3.75
Alcoholis (70%).....ad. 240.0
M. S.—Hair wash (poison).
D. S.—Apply two teaspoonfuls in the morning.

℞. Acidi tannici ..... 2.5
Chloralis hydrati ..... 1.0
Acidi tartarici ..... 2.6
Olei ricini .....gtt. 15
Alcoholis (70%) .....180.0
M. S.—Hair wash.
D. S.—Apply in the morning.

℞. Sulphur præcipit.
Alcohol (90%) ..... 10.0
Aquæ destillat.
Aquæ rosarum.....aa. 120.0
M. S.—Apply at night and wash off in the morning.

Recommended by Sabouraud.

℞. Oil of cade*..... 50.0
Sapo viridis ..... 5.0
Glycerate of starch ..... 50.0

℞. Oil of cade*..... 4.0
Vasiline ..... 30.0

℞. Oil of cade*..... 15.0
Lanoline ..... 15.0

℞. Oil of cade* }
Cocoabutter }..... 10.0
Vasiline }

℞. Oil of cade*.....100.0
Decoction quillaya ..... 30.0
Yellow of one egg.
Distilled water .....250.0

℞. Ichtyol ..... 2.0
Oil of cade*..... 10.0
Vasiline ..... 30.0
Hydr. oxidi rubri ..... 2.0

℞. Ichtyol ..... 5.0
Alcohol }..... 50.0
Ether }
M. S.—Apply with brush.

**Premature Baldness**

℞. Pilocarpini muriatis ..... 1.0
Spir. odorati ..... 16.0
Aquæ rosarum.
Alcohol absolut .....aa. 250.0
M. S.—Rub in scalp morning and evening with soft tooth brush.

℞. Ol. cadini.
Adipis lanæ.
Vasiline .....aa. 10.0
Hydr. oxidi rubri ..... 1.0
M. S.—Rub in scalp at night.

℞. Ac. Acetici ..... 16.0
Pulv. boracis ..... 4.0
Glycerini ..... 12.0
Alcohol ..... 16.6
Aquæ rosarum .....250.0
M. S.—Rub in scalp at night.

*Oil of Cade, very highly recommended by Sabouraud, can be had deodorized and purified by Eimer & Amend, 18th Street and Third Avenue; F. O. Weis, 45th Street and Sixth Avenue; R. C. Timmermann, 62nd Street and Lexington Avenue.

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